The Journal of the International College of Surgeons

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VOLUME 31, NUMBER 1
JANUARY, 1959

CONTENTS

GENERAL SURGERY

Acute Pancreatitis: Report of a Case 1
Samuel Walder, M.D., F.I.C.S., Brooklyn, New York

CARDIOVASCULAR SURGERY

Recurrent Mitral Stenosis: An Increasingly Common Occurrence Due to Inadequate Mobilization of the Valve 8
Charles P. Bailey, M.D., F.A.C.S., F.I.C.S., D.A.B., and Dryden P. Morse, M.D., Philadelphia, Pennsylvania

OBSTETRIC AND GYNECOLOGIC SURGERY

Ovarium Disjunctum: Report of a Case 24
Henry B. Sachs, M.D., F.I.C.S., New York City, New York

The Uterus and the Products of Inflammation: Fundal Keloid? 30
Thomas B. Noble, M.D., F.I.C.S., Indianapolis, Indiana

The Taranto Operation in Correction of Genital Prolapse 38
Juan A. Viaggio, M.D., F.I.C.S., Buenos Aires, Argentina

NEUROLOGIC SURGERY

Diseases of the Cervical Portion of the Spine 47
Irvin Deutsch, M.D., C.M., D.A.B., Miami Beach, Florida

ORTHOPEDIC SURGERY

Flat Foot 59
W. H. Gervis, F.R.C.S., F.I.C.S., Tunbridge Wells, England

THORACIC SURGERY

Coexistence of Pulmonary Carcinoma and Active Tuberculosis of the Lung........ 64
H. Mobarharn, M.D., Oneonta, New York

SURGERY OF THE THYROID AND PARATHYROIDS

Carcinoma of the Thyroid.. 78
Claude R. Swain, M.D., F.I.C.S., Los Angeles, California

DEUTSCHE ABTEILUNG

Das Postcholecystektomie Syndrom.. 80
E. Kaiser, M.D., Zurich, Switzerland

SEZIONE IN ITALIANO

Esperienze Cliniche con il Micoren, un Nuovo Farmaco Analettico............... 87
Angelo Domenico Cattaneo, M.D., Parma, Italy

SECTION EN FRANCAIS

Quelques Aspects du Carcinome du Rectum 92
Sava Simic, M.D., Belgrade, Jugoslavia

Reflexions au Sujet de l'Abord Direct en Tuberculose Chirurgicale 98
B. Blankoff, M.D., Brussels, Belgium

SECCION EN ESPANOL

Oclusión Intestinal Aguda por Hernia Crural Via de Acceso Media Subumbilical.. 104
Octavio Montanez, M.D., Mexico D. F., Mexico

EDITORIAL

Letheon: The Cadenced Story of Anesthesia 109
Chauncey D. Leake, Ph.D., San Francisco, California

NEW BOOKS 127

ABSTRACTS FROM CURRENT LITERATURE.. 136

The Journal of the International College of Surgeons

Official monthly publication of the International College of Surgeons

VOLUME 31, NUMBER 2
FEBRUARY, 1959

CONTENTS

GENERAL SURGERY

Transcutaneous Hepatic Cholangiographic Study: Its Importance in the Diagnosis and Management of Biliary Disease 145
Earl J. Halligan, M.D., F.A.C.S., F.I.C.S., and Rahim Farid, M.D., Jersey City, New Jersey

Treatment of Perforated Peptic Ulcer 154
Carl A. Gherardi, M.D., and Francis Baldrati, M.D., Bologna, Italy

Spontaneous Complication of Cholelithiasis by Gluteal Abscess.................. 161
Pascual Magaldi, M.D., F.I.C.S., Buenos Aires, Argentina

CARDIOVASCULAR SURGERY

Thrombophlebitis of the Superficial and Deep Veins Treated with Phenylbutazone (Butazolidin) 165
Egmont J. Orbach, M.D., F.I.C.S., New Britain, Connecticut

GENITOURINARY SURGERY

Urachal Adenocarcinoma of the Urinary Bladder: Report of Two Cases.......... 169
Allan K. Swersie, M.D., F.A.C.S., Cyril Solomon, M.D., and Blas O. Rayos Jr., M.D., New York City, New York

OBSTETRIC AND GYNECOLOGIC SURGERY

The Oxytocics in Obstetrics: A Clinical Evaluation of Synthetic Oxytocin....... 174
Nejdat Mulla, M.D., Youngstown, Ohio

Detection of Carcinoma in Gynecologic Practice by Cytologic Technics 181
Reuben Straus, M.D., Burbank, California

Massive Hematoma of the Broad Ligament Complicating Cesarean Section: Report of a Case 188
Raymond S. Holtz, M.D., F.I.C.S., Hartford, Connecticut

ORTHOPEDIC SURGERY

De Quervain's Disease 192
Timothy A. Lamphier, M.D., F.A.C.G., F.A.C.S., F.I.C.S., D.A.B., John F Pepi, M.D., Charles Brush, M.D., and Joseph Ostroger, M.D., Boston, Massachusetts

OTORHINOLARYNGOLOGIC SURGERY

Psychologic Factors in Carcinoma of the Head and Neck 201
John J. Conley, M.D., F.A.C.S., New York City, New York

PROCTOLOGIC SURGERY

Antibiotics in the Preoperative Preparation of the Colon: Evaluation of the Present Status 215
Robert Turell, M.D., F.A.C.S., and Stanley J. Landau, M.D., New York City, New York

Editorial

Early French Surgery (Hall of Fame Lecture) 225
G. Kasten Tallmadge, A.M., M.D., Ph.D., Milwaukee, Wisconsin

New Books 260

Abstracts from Current Literature 264

The Journal of the International College of Surgeons

Official monthly publication of the International College of Surgeons

VOLUME 31, NUMBER 3
MARCH, 1959

CONTENTS

GENERAL SURGERY

Ischemic Anastomotic Breakdown and Gangrene of the Gastric Remnant Following Subtotal Gastrectomy 269
Buford T. Casebolt, M.D., Kansas City, Missouri

Extensive Resection of Huge Elephantoid Tissues 273
T. Kanaka Raju, F.R.C.S. (Eng.), F.I.C.S., Rajahmundry, India

Obstructing Eosinophilic Granuloma of the Stomach Associated with Arteriomesenteric Duodenal Compression 281
Meyer O. Cantor, M.D., F.A.C.S., Detroit, Michigan

Evaluation of Plication in the Treatment of Peritonitis and Its Aftermath of Intestinal Adhesions 286
Thomas B. Noble, M.D., F.I.C.S., Indianapolis, Indiana*

CARDIOVASCULAR SURGERY

Infarction of the Renal Artery 294
Alfonso de la Peña, M.D., F.I.C.S., Aurelio C. Uson, M.D., and Meyer M. Melicow, M.D., F.I.C.S., New York City, New York

Roger's Disease Treated by Cardiopericardiomyopexy: Report of Six Cases 301
Aaron N. Gorelik, M.D., F.A.C.C., F.A.C.A., F.N.Y.C.S., F.I.C.S., New York City, New York

GENITOURINARY SURGERY

Treatment of Vesical and Prostatic Carcinoma with Atomic Medicine 305
Carl F. Rusche, M.D., F.A.C.S., F.I.C.S., D.A.B., and Henry L. Jaffe, M.D., Los Angeles, California

NEUROLOGIC SURGERY

Complicated Cerebral Palsy: Surgical Pathologic Aspects 315
Samuel Rosner, M.D., F.A.C.A., F.I.C.S., Bronx, New York

Laminectomy in Patients with Injuries of the Spinal Cord 323
A. Estin Comarr, M.D., F.A.C.S., F.I.C.S., D.A.B., Long Beach, California

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OBSTETRIC AND GYNECOLOGIC SURGERY

Bilateral Mastectomy for Carcinoma of the Breast 329
Henry Patrick Leis, Jr., M.D., F.A.C.S., F.I.C.S., New York City, New York

OPHTHALMOLOGIC SURGERY

Mass Ophthalmic Surgery under Handicaps in Pakistan 335
Roland I. Pritikin, M.D., F.A.C.S., F.I.C.S., D.A.B., Rockford, Illinois

ORTHOPEDIC SURGERY

Treatment of Colles' Fracture 341
A. P. Guttman, M.D., F.R.C.S. (Edin.), F.I.C.S., Winnipeg, Manitoba, Canada

SECTION EN FRANCAIS

Le Probleme de la Reparation des Tendons Flechisseurs 347
Marc Iselin, M.D., F.I.C.S., et J. Bassot, M.D., Paris, France

SECCION EN ESPANOL

Yodopexia y Nefrogramas 354
A. Puigvert, M.D., F.I.C.S., Barcelona, Spain

Indicaciones Actuales de la Canalizacion en la Colecistectomia 369
Francisco Fonseca, M.D., F.I.C.S. (Hon.), Mexico D. F., Mexico

El Uso de la Sonda de Cattell en Cirugia Biliar 373
Francisco Puente Pereda, M.D., Mexico D. F., Mexico

Editorial

British Surgeons and Anatomists 376
Lloyd G. Stevenson, M.D., Montreal, Quebec, Canada

New Books 380

Abstracts from Current Literature 387

The Journal of the International College of Surgeons

Official monthly publication of the International College of Surgeons

VOLUME 31, NUMBER 4
APRIL, 1959

CONTENTS

GENERAL SURGERY

A Modification of Bassini-Rienhoff's Herniorraphy, with Preservation of the Functional Mechanism of the Inguinal Canal 393
I. Kopel, M.D., and B. Markowski, M.D., F.I.C.S., Belize, British Honduras

Congenital Posterolateral Diaphragmatic Hernia: Pathogenesis and Treatment.... 401
Virul Kao Borisuti, M.B., and Smarn Muntarbhorn, M.B.B.S. (Lond.), F.I.C.S., Bangkok, Thailand

A New Study of Intestinal Obstruction with Special Reference to Cases Involving Delayed Treatment 407
M. S. Emine, M.D., F.I.C.S., Tabriz, Iran

Fatal Hemorrhage from Duodenal Varix........ 414
Paul Hwang, M.D., Eugene J. Jorgenson, M.D., Paul Anspach, M.D., and Albert F. Brown, M.D., Glendale, California

Routine Use of Peri-Colace in Major Surgical Cases 420
Timothy A. Lamphier, M.D., F.A.C.S., F.I.C.S., and Frank Lyman, M.D., Boston, Massachusetts

GENITOURINARY SURGERY

Renal Colic Secondary to Traumatic Avulsion of the Psoas Muscle: Report of a Case 424
Charles Pierre Mathé, M.D., F.A.C.S., F.I.C.S., San Francisco, California

Nephropexy: An Evaluation 429
Roger W. Barnes, M.D., F.A.C.S., F.I.C.S., and Thomas A. Horsley, M.D., Los Angeles, California

NEUROLOGIC SURGERY

Laminectomy in Patients with Injuries of the Spinal Cord........ 437
A. Estin Comarr, M.D., F.A.C.S., F.I.C.S., D.A.B., Long Beach, California

OBSTETRIC AND GYNECOLOGIC SURGERY

Some Myofascial Impingements Against the Iliohypogastric and Ilioinguinal Nerves in Women 443
James O. Brown, B.S., M.S., Ph.D., F.I.C.S. (Anat.), and Leib J. Golub, M.D., F.A.C.S., F.I.C.S., Philadelphia, Pennsylvania

Vulval and Extraperitoneal Hemorrhage Complicating Obstetric and Gynecologic Surgery 448
H. Melvin Radman, B.S., M.D., F.A.C.S., F.I.C.S., Philip Grant, M.D., and William Korman, B.Sc., M.D., Baltimore, Maryland

The Management of Puerperal Constipation with a Senna Preparation............ 455
S. C. Kasdon, M.D., F.A.C.S., and B. O. Morentin, M.D., Boston, Massachusetts

OPHTHALMOLOGIC SURGERY

Binocular Simultaneous Cataract Extraction 459
John Scillieri, M.D., F.I.C.S., D.A.B., Paterson, New Jersey

OTORHINOLARYNGOLOGIC SURGERY

Evolutionary Progress in the Surgical Treatment of Middle Ear Deafness of Otosclerotic Origin 464
Julius Lempert, M.D., F.I.C.S., New York City, New York

SECTION EN FRANCAIS

Les Kystes Hydatiques du Foie Ouverts dans les Voies Biliaires.................. 475
Pedro L. Cereseto, M.D., F.I.C.S., Tandil, Argentina

SECCION EN ESPANOL

Palidotomia en el Tratamiento de Algunas Disquinesias: Tecnica Personal........ 479
Manuel M. Velasco-Suarez, M.D., Mexico D.F., Mexico

EDITORIAL

The History of Anesthesia: The Early Days 486
Max S. Sadove, M.D., F.I.C.S., and Lester Schwartz, M.D., Chicago, Illinois

NEW BOOKS 496

ABSTRACTS

Survey of German Literature on General and Orthopedic Surgery since 1956........ 500
K. Boshamer, M.D., F.I.C.S., Wuppertal-Barmen, Germany, with the collaboration of Heinz Griessmann, M.D., F.I.C.S., Neumuenger-Holstein, Otto Kingreen, M.D., F.I.C.S., Ludenscheid, and Hanns Galli, M.D., Munich;
translated by Kurt Eichelbaum, M.D., F.I.C.S., Chicago, Illinois

The Journal of the International College of Surgeons

Official monthly publication of the International College of Surgeons

VOLUME 31, NUMBER 5
MAY, 1959

CONTENTS

GENERAL SURGERY

Polydirectional Tomography and Its Application to Surgery 513
C. Wangermez, M.D., F.I.C.S., M. Martin, M.D., M. Broussin, M.D.,
J. Wangermez, M.D., P. Bonjean, M.D., and M. Bisch, M.D., Bordeaux, France

Immediate Postoperative Complications of Partial Gastrectomy 529
J. C. Grant, M.B., Ch.B., F.R.C.S. (Eng.), F.R.F.P.S., Glasgow, Scotland

GENITOURINARY SURGERY

Operative Treatment of Urethral Stricture 541
Luis A. Surraco, M.D., Montevideo, Uruguay

Congenital and Acquired Obstructions of the Urinary Tract 551
J. Sydney Ritter, M.D., F.A.C.S., D.A.B., New York City, New York, and
Henry Ritter Jr., M.D., F.I.C.S., San Francisco, California

OBSTETRIC AND GYNECOLOGIC SURGERY

Lavage of the Endometrial Cavity as an Aid in the Diagnosis of Carcinoma of the Uterine Corpus 570
Daniel G. Morton, M.D., D.A.B., Jerry G. Moore, M.D., D.A.B., and Norman Chang,
Los Angeles, California

Carbonic Anhydrase Inhibitors: Their Effect on Water and Electrolyte Metabolism in Toxemia of Pregnancy 579
José Filipe Afonso, M.D., and Russell R. de Alvarez, M.D., Seattle, Washington

OPHTHALMOLOGIC SURGERY

A New Type of Tendon Transplant Operation for Abducens Paralysis 593
Robert J. Schillinger, M.D., Los Angeles, California

EDITORIAL

Reflections on the Conquest of Pain, Infection and Hemorrhage 601
Eugene M. K. Geiling, M.D., F.I.C.S., Chicago, Illinois

NEW BOOKS 615

ABSTRACTS FROM CURRENT LITERATURE

Survey of German Literature on General and Orthopedic Surgery since 1956........ 620
K. Boshamer, M.D., F.I.C.S., Wuppertal-Barmen, Germany, with the collaboration of Heine Griessmann, M.D., F.I.C.S., Neumuenger-Holstein, Otto Kingreen, M.D., F.I.C.S., Ludenscheid, and Hanns Galli, M.D., Munich; translated by Kurt Eichelbaum, M.D., F.I.C.S., Chicago, Illinois

ARTICLES TO BE PUBLISHED

Some Angiographic Aspects of Thyroid Pathology: An Evaluation of Subclavian Retrograde Arteriography in Clinical Study
A. Bobbio, M.D., F.I.C.S., E. Bezzi, M.D., E. Zanella, M.D., and L. Rossi, M.D., Parma, Italy

Indwelling Common Duct Tubes
Lyon H. Appleby, M.D., F.I.C.S., Vancouver, British Columbia, Canada

Five Years' Conservative Treatment of Acute Appendicitis
Eric Coldrey, M.D., F.R.C.S., Rotherham, England

L'Osteosynthese du Tibia par Coapteur
Albert Duchène, M.D., F.I.C.S., Ans-Liége, Belgium

The Journal of the International College of Surgeons

Official monthly publication of the International College of Surgeons

VOLUME 31, NUMBER 6
JUNE, 1959

CONTENTS

GENERAL SURGERY

Indwelling Common Duct Tubes 631
Lyon H. Appleby, M.D., F.R.C.S. (Eng.), F.R.C.S. (Can.), F.A.C.S., F.I.C.S., Vancouver, British Columbia, Canada

Intra-Operative Choledochoscopic Study 644
Heinz Griessmann, M.D., F.I.C.S., Neumunster-Holstein, Germany

Elective Subtotal Gastrectomy for the Treatment of Peptic Ulcer 648
Alfredo Lepore, M.D., and John A. McCabe, M.D., F.A.C.S., Brooklyn, New York

Supervoltage Radiation Therapy of Carcinoma 657
Justin J. Stein, M.D., F.A.C.S., F.I.C.S., D.A.B., Los Angeles, California

Secondary Excision of War Wounds 665
Vishwanath P. Gupta, M.S., F.R.C.S. (Eng.), F.I.C.S., APO 56, India

GENITOURINARY SURGERY

An Ideal Surgical Correction of Ectopia Vesica 674
W. G. Shultz, M.D., F.A.C.S., F.I.C.S., D.A.B., Tucson, Arizona

Urethrograms in the Diagnosis and Management of Benign Prostatic Hypertrophy .. 683
Donald Rolnick, M.D., Roland R. Cross Jr., M.D., and Frederick A. Lloyd, M.D., Hines, Illinois

Complete Replacement of the Urinary Bladder with Ileum Anastomosed to the Urethra: Experiments on Dogs 692
Albert E. Goldstein, M.D., F.A.C.S., F.I.C.S., D.A.B., Baltimore, Maryland, Cafer Yildiran, M.D., Istanbul, Turkey, Robert R. Goldstein, M.D., Baltimore, Maryland, Morton Goldfarb, M.D., Rockville Center, New York, and Henry Nathans, M.D., Israel

Large Ureteral Calculi in a Completely Duplicated Ureter 701
Joseph S. Sidoti, M.D., F.I.C.S., and Vincent J. Valiente, M.D., Staten Island, New York

PLASTIC AND RECONSTRUCTIVE SURGERY

Reconstruction of the Philtrum in Cleft Lips 705
Gerald Brown O'Connor, M.D., F.A.C.S., F.I.C.S., and Mar W. McGregor, M.D., San Francisco, California

SECTION EN FRANCAIS

L'Osteosynthese du Tibia par Coapteur.. 710
Albert Duchene, M.D., F.I.C.S., Ans-Liege, Belgium

EDITORIAL

Observations on the History of Physical Diagnosis: Hippocrates, Auenbrugger, Laennec 717
Saul Jarcho, M.D., New York City, New York

NEW BOOKS 726

ABSTRACTS FROM CURRENT LITERATURE.. 734

VOLUME INDEX 738

ARTICLES TO BE PUBLISHED

Some Angiographic Aspects of Thyroid Pathology: An Evaluation of Subclavian Retrograde Arteriography in Clinical Study
A. Bobbio, M.D., F.I.C.S., E. Bezzi, M.D., E. Zanella, M.D., and L. Rossi, M.D., Parma, Italy

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Leon M. Beilin, M.D., F.I.C.S., Chicago, Illinois

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General Surgery

Acute Pancreatitis

Report of a Case

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The author reports the results of successful treatment of 1 patient with acute necrotizing pancreatitis. In the light of the recent literature reporting a high mortality rate with similar therapeutic methods, the record of this case is offered in support of surgical approach to the complications of acute pancreatitis.

IN the past years much thought and effort have been expended in the hope of improving the understanding and therapy of various lesions of the pancreas. Diagnostically and therapeutically, acute pancreatitis remains a highly controversial disease.

Acute pancreatitis is said to occur in two forms, which are similar in their clinical manifestations but have radically different pathologic changes and prognoses. In each there are sudden, severe epigastric pain, prostration, shock and toxicity. Serum amylase elevation is almost always associated with diseases of the pancreas. Even pancreatic involvement secondary to duodenal ulcer or mesenteric thrombosis may produce an increase in serum amylase activity.

The benign form, often referred to as acute interstitial pancreatitis, occurs most

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frequently in young adults and may be responsible for abdominal signs and symptoms, including severe epigastric pain, tenderness, vomiting and shock. More frequently than not, no previous gastrointestinal symptoms have occurred in these patients. The serum amylase level may be elevated, and there is leukocystosis. Recovery is common. Patients have been known, however, to die forty-eight hours to six days after the attack, and at autopsy it is not uncommon to observe that they had chronic biliary and pancreatic disease.

The second form, acute hemorrhagic pancreatitis, is associated with severe pain, nausea, vomiting and abdominal tenderness. Seventy per cent of the patients have had previous abdominal complaints. Frequently there are abdominal rigidity, cyanosis, hemoconcentration, shock and, occasionally, jaundice. The serum amylase level is elevated for two to three days. Serum lipase levels rise after the second day and return to normal long after the amylase does. The diagnosis is strengthened by roentgen evidence of flattening and elevation of the greater curvature of the stomach, widening of the duodenal loop and a so-called sentinel loop of distended jejunum. Diagnosis cannot, however, depend solely upon these roentgen data, because they are not consistent. When there is fat necrosis, ionized calcium combines with fatty acids to form calcium soaps. The serum calcium is therefore often decreased. A level of less then 7 mg. per hundred cubic centimeters is frequently followed by tetany and death.

Investigation of the pathogenesis of this disease has produced several likely theories. Opie has demonstrated that a gallstone lodged in the ampulla of Vater might cause reflux of bile into the pancreatic duct and be followed by pancreatitis. Although this seems quite possible, it has been shown to be the etiologic mechanism in very few cases. Molander and Bell, however, have noted that cholelithiasis occurs more frequently in persons with acute pancreatitis than in the general population of the same age and sex. Obstruction may also be due to fibrosis or spasm of the sphincter of Oddi. Metaplasia of the epithelium of the small ducts may be responsible for obstruction, as was suggested by Rich and Duff. In any event, secretion continues after obstruction, resulting in rupture of acini of the gland and smaller ducts and liberation of enzymes into the parenchyma of the gland.

In some cases these etiologic concepts do not pertain, and other explanations of pathogenesis must be postulated. One such mechanism is reflux of bile into the pancreatic ducts. Ingestion of alcohol or a heavy meal may stimulate secretion and promote rupture of the acini. Spread of infection from adjacent tissues and tissue necrosis due to vascular occlusions and vascular lesions are also reported, as are infrequent cases in which the rupture follows trauma.

In summary, the pathogenesis is theoretically toxic, infectious, chemical, obstructive or arteriosclerotic.

Conservative therapy is generally accepted as the best available. Briefly this consists of decreasing the stimulation of the pancreas; emptying the stomach by Levine tube; relieving pain; maintenance of fluid and electrolyte balance, with careful attention to calcium levels, and general supportive treatment, including the use of insulin when necessary. When this plan of therapy is employed, the fatality rate of acute necrotizing pancreatitis runs to 50 per cent.

It is becoming more and more apparent that when the cause can be traced to one of the factors producing obstruction of the outflow of pancreatic secretions, particularly in the chronic, relapsing form, surgical treatment is much more effective. The following case illustrates this point.

REPORT OF A CASE

R. F., a 33-year-old Negro, was admitted to the hospital on July 7, 1957. The chief complaint was of lancinating pain in the epigastric region, associated with vomiting of nonbloody gastric contents. The symptoms began approximately two hours prior to admission. Two months earlier the patient had been hospitalized for similar complaints and discharged after one week, symptom free. The diagnosis at that time was acute interstitial pancreatitis.

A gastrointestinal series and a gallbladder series on the first admission were reported as giving negative results.

Physical examination on the second admission disclosed the patient to be a rather well developed and well nourished man, appearing the stated age. He was conscious, cooperative and alert but in extreme pain. The pulse rate was 100 per minute and the beat regular. The blood pressure in millimeters of mercury was 140 systolic and 100 diastolic. The abdomen was flat and rather soft. The midepigastrium and the right upper abdominal quadrant were tender on deep palpation. There was minimal muscle guarding in these areas. Bowel sounds were diminished. The liver and spleen were not palpable. No other masses were palpated. No icterus was noted. The remainder of the physical examination was unremarkable.

Laboratory data at the time of admission and throughout the hospital stay are summarized in the accompanying table. The serum amylase titer of 1,485 K. A. units on admission confirmed the clinical diagnosis of acute pancreatitis.

Radiologic examination of the chest and abdomen revealed no abnormality.

With the clinical diagnosis of acute pancreatitis, it was decided to treat the patient conservatively. Therapy consisted of continuous intravenous feeding with careful attention to correction of the electrolyte balance, gastric suction with a Wangensteen apparatus connected to a Levine tube, administration of parasympatholytic agents, Methantheline bromide (Banthine), atropine and antibiotics, including penicillin, streptomycin and chloramphenicol. For sedation and analgesia the patient was given Meperidine (demerol) or sodium luminol.

In spite of meticulous medical and nursing care the patient's condition became worse. The abdomen gradually became distended and the epigastric tenderness more pronounced. Several loose bowel movements occurred on the fourth and fifth days. On the sixth day the patient was given 100 mg. of hydrocortisone three times. No change was noted.

On the eighth day after admission an exploratory laparotomy was performed in order to rule out acute destructive changes in the biliary tree, and also to divert the biliary stream.

The major observations at the time of laparotomy were as follows: Approximately 500 cc. of clear straw-colored fluid was present in the peritoneal cavity. The pancreas was moderately enlarged, edematous and indurated, with white patches on the surface; the omentum was hard and studded with numerous yellow-white necrotic areas; the mesenteries were similarly studded with yellow-white necrotic areas; the gallbladder was distended, but no calculus was palpable. The operative procedure was cholecystostomy and removal of a biopsy specimen of the omentum. Five penrose drains were placed in the abdomen.

The microscopic pathologic diagnosis returned was acute fat necrosis.

Postoperatively, the patient's temperature was 102 F. continuously for one week. During this time the pulse rate was between 100 and 110 per minute and the blood pressure was maintained at 130 systolic and 85 diastolic to 135 systolic and 100 diastolic. On the first postoperative day, the patient showed signs of delirium tremens, which were controlled with 100 mg. of Sparine four times a day. The patient was given blood transfusions and intravenous albumen. On the eighth postoperative day the temperature came down to 99.8 F. for the first time. This was accompanied by a slower pulse. The abdomen was soft and less tender. Oral feedings were instituted. The hydrocortisone dose was gradually decreased, and on the eighth postoperative day its administration was discontinued.

During the following days the patient was ambulatory and oral intake was increased. On the fourteenth postoperative day retrograde cholecystographic examination was performed and revealed that the gallbladder, cystic duct and common ducts were of normal size, shape and position. The opaque material entered the descending arm of the duodenal loop immediately. On the fifteenth postoperative day a gastrointestinal series was taken. Pronounced duodenitis and suggestive evidence of enlargement of the head of the pancreas was reported. The serum amylase titer gradually

Laboratory Data, 1957

	Tests	*July 7*	*July 9*	*July 10*	*July 13*	*July 17*	*July 20*	*July 22*
CBC	Hematocrit		56%		35%	35%	38%	
	R.B.C.	4.83	4.10		4 65	3.75	3.90	3.60.
	W.B.C.	12,800	12,800		18,200	40,000	15,000	
	Hgb.	16 Gm.	14 Gm.		14 Gm.	12 Gm.	11.4 Gm.	11 Gm.
	Polys.	81%	88%		79%	84%	82%	
	Lymphs.	19%	12%		21%	12%	18%	
	Monos.					4%		
	Basos.							
	Eosins.							
Urine	Albumin	0	0	0			1+	
	Dextrose	0	0	0			0	
	Acetone	0	0	0			0	
	W B.C.	0		Mod.				
	R.B.C.	0						
	Casts							
	Epith.			Mod				
	Crystals			Ca Phos.				
	Bacteria							
Chemistry	Serum lipase					0.3		
	Serum amylase	1,485	1,254	390	110	35	30	55
	BUN	14			15	15		13
	Creatine							
	CO_2	23 Vol %	39 Vol. %	48 Vol. %	50 Vol. %	42 Vol %	45 Vol. %	34 Vol. +
	Na		127			133	131	128
	Cl		400			440	490	440
	Ca		QNS	9.0		9.0	11.5	
	K		4 6			4.2	3.6	4.3
	FBS	190		120	85	108	143	
	Icterus index					20		
	Bilirubin			2 0		0 8		
	Ceph. flocc.			0			2+	1+
	Thymol turb.			1.0			0	0
	T. protein							
	Serology	Negative						

returned to normal.

On the twentieth postoperative day the patient's temperature rose to 102 F., and he complained of pain in the periumbilical region and the right upper abdominal quadrant. Physical examination disclosed diminished breath sounds in the right lower lung field and dullness to percussion on the right side. The abdomen was tender and firm, and there was dullness to percussion in both flank areas. Bowel sounds were diminished. Roentgen examination confirmed the impression of bronchopneumonia in the lower lobe of the right lung and free peritoneal fluid. With treatment the temperature returned to normal, and symptoms were alleviated within the following few days.

The cholecystostomy tube was removed on the twenty-fourth day, and all wounds closed spontaneously by the thirtieth day.

The patient, however, continued to complain of a more or less constant, aching, and at times severe, abdominal pain. The abdomen remained slightly distended, and a moderately firm mass was palpated in the upper quadrant. On the thirty-sixth postoperative day the wound wherein the cholecystostomy tube had been previously maintained opened spontaneously and a moderate amount of biliary drainage was noted. Culture of the material revealed E. coli and B. proteus, which were sensitive only to a high concentration of chloramphenicol. On the forty-fourth day a spiking fever and abdominal pain developed. There was marked tenderness in the epigastrium. On the forty-fifth postoperative day another laparotomy was performed, with two diagnoses in mind: (1) pseudocyst of the pancreas and (2) intra-abdominal abscess.

With the region under spinal anesthesia, the abdomen was entered through a midline incision. The major observations were as fol-

Laboratory Data, 1957

	Tests	*Aug 5*	*Aug 20*	*Aug 30*	*Aug 31*	*Sept. 4*	*Sept 13*	*Sept 23*
	Hematocrit	38%		44%	44%		43%	
	R.B.C.	4.00		5.00	5.00	3.90	3.90	3.40
	W.B.C.	28,000		21,000	21,700		21,000	19,000
CBC	Hgb.	11.5 Gm.		14 Gm.	94%		80%	74%
	Polys.	90%			82%		84%	
	Lymphs.	10%			16%		16%	
	Monos.							
	Basos.							
	Eosins.							
	Albumin		2+	0	0	0		
	Dextrose		0	0	0	0		
	Acetone		0	0	0	0		
Urine	W.B.C.		Num.	0	0	0		
	R.B.C.		Occ.	0	0	0		
	Casts		Gran.		0			
	Epith.		0-25					
	Crystals							
	Bacteria							
	Serum lipase							
	Serum amylase	148	67	60				
	BUN		21		27			
	Creatine							
	CO_2		30 Vol. %	54 Vol. %	48 Vol. %	54 Vol. %	50 Vol. %	
	Na		133	135 5	133	135 5		
Chemistry	Cl		420	428	425	428		
	Ca							
	K				4.0	3.6		
	FBS							
	Icterus index	10						
	Bilirubin							
	Ceph. flocc.							
	Thymol turb.							
	T. protein							
	Serology	Negative						

lows: There was an accumulation (300 cc.) of serous fluid in the peritoneum; there was partial obstruction of the small intestine, due to massive adhesions of all loops of the small intestine and adhesions between the small bowel and abdominal wall, most marked in the area of the previous incision; fat necrosis of the mesenteries and omentum was noted; the omentum was indurated and adherent to the transverse colon as a mass; the pancreas was edematous and nodular, but there were no cystic formations, and there was an abdominal fistula communicating with the gallbladder directly. There was no abscess in the abdomen, nor was there any free bile. The operative procedure consisted of lysis of adhesions, insertion of a mushroom catheter into the gallbladder and insertion of 2 Penrose drains into the abdomen

For one week after the operation, the patient had temperatures ranging from 100 to 102 F The abdomen was slightly distended for the first few days, and the patient complained of severe abdominal pain. Flatus was first expelled on the fourth postoperative day. Bowel sounds were normal at this time. Oral feedings were begun, and the patient was ordered out of bed On the eighth postoperative day a retrograde cholangiogram was taken, and a normal visualization of the biliary tree, with instant emptying, was reported. On the tenth postoperative day, a foul-smelling, purulent discharge was seen around the cholecystostomy tubing. Culture of this material revealed growth of E. coli, Streptococcus haemolyticus and Staphylococcus albus, which were sensitive only to high concentrations of chloramphenicol. With treatment, the purulent discharge gradually subsided, and on the twentieth postoperative day the tubing was removed completely. Biliary discharge from the wound ceased completely one month after the second operation. At that time the patient no longer complained of pain and had begun to gain weight. The patient was discharged on Oct. 23, 1957.

COMMENT

The diagnosis of acute pancreatitis is a difficult one. The differential diagnosis should include acute perforation of peptic ulcer, acute cholecystitis and appendicitis, as well as such entities as high intestinal obstruction, coronary thrombosis and early pneumonia with pleurisy. The use of antibiotics in the conservative treatment of the patient with acute pancreatitis is prophylactic, because secondary infection of necrotic tissue, of partially obstructed biliary passages or of an atelectatic lung is a dangerous possibility. When surgical intervention is indicated, the procedure of choice is cholecystostomy or cholecystectomy with choledochostomy. Perforation of the pancreatic capsule during the procedure is to be avoided. Careful and meticulous supportive care of the patient must be available. Attention to electrolyte balance, physical signs and subjective symptoms must be thorough.

ZUSAMMENFASSUNG

Der Verfasser berichtet über die erfolgreiche Behandlung eines Kranken mit akuter nekrotisierender Bauchspeicheldrüsenentzündung. Angesichts der hohen Sterblichkeitsquote, die im neueren Schrifttum bei ähnlichen therapeutischen Verfahren berichtet wird, veröffentlicht der Verfasser diesen Fall zur Rechtfertigung der chirurgischen Behandlung von Komplikationen der akuten Pancreatitis.

RESUMEN

El autor da cuenta del resultado satisfactorio en el tratamiento de un enfermo afecto de pancreatitis necrosante. Ante el criterio tan extendido en la literatura sobre la alta mortalidad de la terapéutica operatoria, este caso representa una defensa de la intervención quirúrgica para las complicaciones de la pancreatitis aguda.

SUMÁRIO

O autor apresenta o resultado do tratamento com sucesso de um paciente com pancreatite necrotizante aguda.

Na literatura recente as comunicações revelam uma cifra de mortalidade elevada com métodos terapêuticos similares e a apresentação dêste caso é oferecida como apoio ao tratamento cirúrgico das complicacões da pancreatite aguda.

RIASSUNTO

L'autore riferisce un caso di pancreatite necrotica acuta operato con successo. Ciò può deporre a favore della cura chirurgica di questa affezione, per quanto la Letteratura recente riporti alte quote di mortalità con tale metodo terapeutico.

RÉSUMÉ

L'auteur montre les résultats d'un cas de pancréatite nécrosante traité avec succès. A la lumière de la littérature récente rapportant un taux de mortalité élevé avec des méthodes thérapeutiques similaires, la description de ce cas vient appuyer la voie d'approche chirurgicale pour les complications de la pancréatite aiguë.

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Harvey Cushing used to say that only once in his life had he been persuaded to take a proper vacation and go fishing in Canada. and that was the year the European war broke out.

The four years of the first World War brought the work of modern surgeons to maturity. It was indeed the first real chance to try out new methods on a large scale. Lord Lister himself had died only in 1912. though he had lived to see his life's work confirmed on the battlefield in both the Franco-Prussian and South African wars. But. compared with what was to come. those were rehearsals only. Between 1914 and 1918 the field doctors developed in a crescendo of opportunities. In one week crushed limbs. punctured abdomens and shattered skulls brought them more need of antiseptic surgery than in a lifetime at home. and the surgeons learned how much interference the human frame could stand. and yet recover. War. which extends human knowledge in so many directions. looked with indulgence upon them only.

As early as August 1914 a group of Americans living in Paris had organized an American ambulance. that is a mobile team of doctors. nurses and orderlies. which centred upon an existing American hospital at Neuilly and which soon had beds for five or six hundred patients. Certain American universities were asked to provide medical personnel to assist this enterprise: the first of these surgical units was led by the Cleveland doctor. George Washington Crile. and in April 1915 Harvey Cushing reached the Western Front at the head of a corresponding group from Harvard. He was to be in the war practically until the end.

—Williams

Cardiovascular Surgery

Recurrent Mitral Stenosis: An Increasingly Common Occurrence Due to Inadequate Mobilization of the Valve

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SURGICAL procedures for mitral stenosis have attained a high state of perfection. At present, surgical treatment for relief of mitral stenosis has reached a point at which, by opening and mobilizing the valve fully,[1] the surgeon can return the majority of his patients to a functional state near the normal, with every expectation of continuing good health. Unfortunately the early operative technic was not capable, in most instances, of attaining more than 25 per cent of normal opening (Fig. 1, *A* and *B*). Consequently, many of the early patients have no such expectation.

In 44 of our patients who were operated on between 1948 and 1955, stenosis has recurred, as was proved either at reoperation or at autopsy (Table 1). Probably many others have recurrent stenosis, although the diagnosis has not been made. The difficulties attendant upon the diagnosis of this condition have caused us to include only those patients in whom direct digital examination of the valve has been carried out at both operations by the same surgeon (C.P.B.). The cases of the first 22 of these have been reported and reference

The authors, having encountered recurrent mitral stenosis in 44 of a series of 1,607 cases, announce that it is now possible to perform routinely an operation that effectively returns the valve to a normal functional capacity. This procedure is described and illustrated. The term by which it is designated is neostrophingic mobilization of the septal leaflet. As a rule, it can be performed only by the right thoracic approach.

It is expected that this modern operation will reduce the incidence of recurrent mitral stenosis to a significant extent, although many patients surgically treated in the past, especially when operated on by the left-sided approach, will eventually require treatment for recurrence.

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made to the world-wide appearance of reports of recurrent stenosis.[2]

We have used the following criteria for "true" recurrent stenosis (after complete opening of at least one commissure at the initial operation): the reappearance of symptoms and signs of mitral obstruction after at least a year of marked improvement, the demonstration on catheterization of the left side of the heart, of a significant gradient across the valve, and the observation of tight stenosis (less than 1 finger breadth) at the second operation (Table 1).

Belcher[3] has defined "true" recurrent stenosis as occurring only after one or both commissures have been completely opened; "false" recurrent stenosis, on the other hand, refers to a situation in which neither commissure has been divided beyond the area of insertion of the papillary muscles.

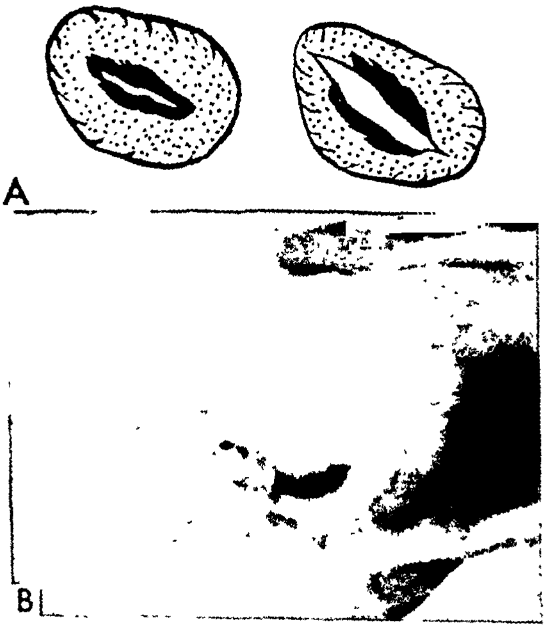

Fig. 1.—*A*, early concept (1948) of linear lengthening of the valve slit at both commissures, if possible. *B*, opening at only one commissure, which was the actual accomplishment in more than two-thirds of first 1,000 patients, producing an aperture only 25 per cent or less of the normal area. Usually the anterior commissure only was opened. Compare with Fig. 4*B*.

With these criteria, recurrent stenosis has become an increasingly common problem in our experience (Table 2). In the last year alone, 21 of our own patients and 11 originally operated on elsewhere have required reoperation. We have been distressed by these cases. We also have been disappointed by the poor results of five-year follow-up of our first 200 survivors, among whom only two-thirds remain "improved."[4]

The Typical Case of Recurrent Stenosis.—A typical picture develops in the patient with recurrent stenosis (5 per cent of patients operated on four years ago or earlier (Table 3). A 27-year-old woman (Case 16) underwent a mitral commissurotomy by the old left-sided approach in September 1952. By digital pressure alone, the anterior commissure of a flexible valve was opened well. (In two-thirds of our first 1,000 cases only this one commissure was opened.[5]) The final opening was 1½ finger breadths, with no regurgitation.

The patient was much better for about two years. The diastolic murmur, however, persisted (as it has in 92 per cent of the patients operated on from the left side[4]). After three years there was a gradual return of fatigue, shortness of breath and hemoptysis. A combined catheterization of the right and left sides of the heart revealed that, with a cardiac output of 3.9 liters per minute, there was a pressure gradient across the mitral valve of 20 mm. The calculated valve area[6] was 1 sq. cm.

Accordingly, in February 1956, reoperation was done through a right-sided incision (Fig. 2, *A*, *B*, *C* and *D*). The valve would not permit the tip of the index finger. It was leathery, but there was no calcification. The posterior commissure was split digitally without incident, and a dense chordopapillary fusion mass below the valve was split almost to its ventricular insertion. The anterior commissure was cut twice with a guillotine knife and then split to its full extent. The septal leaflet became fully mobile. There was no evidence of regurgitation.

The patient stated that the second operation was much easier and less painful than the first, as have our other patients with recurrent stenosis. The diastolic murmur has disappeared and the patient is completely asymptomatic. A postoperative combined catheterization of the left and right sides of the heart has revealed that, with a flow of 3.8 liters per minute, the mitral gradient has dropped from 20 to 4 mm. of pressure and the calculated valve area has increased from 1.0 to 3.6 sq. cm.

Present Incidence of Recurrent Stenosis and the Expectation for the Future. — By the end of 1952, 600 of our patients had survived operation for mitral stenosis. Five years later, 1 out of 20 of these had proved recurrent stenosis. It may be presumed that, since the diagnosis is difficult to make, the actual rate of recurrence is much higher. Probably 20 per cent or more of the patients operated from the left side eventually will have symptomatic recurrent stenosis. Wood[7] has stated that "true" recurrence occurs in 2 per cent per

TABLE 1A.—*Historical Data, Pathologic Observations and Change in Valve Size In Six Cases of Recurrent Stenosis Observed at Autopsy*

	Operative Data					*Interval Period*		*Autopsy Data*			
Case No., Age, Sex	*Date Op.*	*Valve Size Accomp.*	*Calc. at Op.*	*Number Comm. Opened*	*Rheum. Find. App.*	*Period Improvement*	*Interval Op. to Death*	*Date Death*	*Valve Size Autop.*	*Calc. at Autop.*	*Rheum. Find. Autop.*
1—S. M. 24 M	2/10/50	2 F	Yes	Both	1 Asch. Nod.	3 yr.	4 yr.	3/12/54	0.75 sq. cm.	Yes	None
2—D. R. 33 F	5/7/52	1½ F	Mod.	1 (ant.)	Neg.	1 yr.	2.5 yr.	10/4/54	Fingertip	Marked	Asch. Bodies Myocard.
3—D. R. 47 F	3/9/54	1½ F	No	Both	Not Done	?	0.8 yr.	1/23/55	Fingertip	No	None
4—G. W. 28 M	8/4/53	1¾ F	Mild	1 (ant.)	Rheum. Endocard.	1 yr.	2.0 yr.	8/22/55	0.8 cm. length	Marked	None
5—G. A. 26 M	7/27/51	1½ F	Yes	Ant.-to ring Post-slt.	Not Done	3 yr.	4.3 yr.	11/16/55	Fingertip	Yes	None
6—C. F. 54 F	11/24/52	1½ F	Mod.	Both	Asch. Nod.	2 yr.	3.0 yr.	11/7/55	Lead pencil*	Marked	None

Key:
Fingertip — 0.5 - 1 sq. cm.
1 F — 1.5 sq. cm.
1½ F — 2.5 - 3.5 sq. cm.
2 F — 4 - 6 sq. cm.
*Lead pencil — 0.6 sq. cm.

TABLE 1B (*previously published*[1]).—*Duration of Postoperative Improvement and Changes in Valve Size Between Operations in 16 Patients Operated on for Recurrent Stenosis of the Mitral Valve*

	First Operation							Last Operation			
Case No. Int. Age, Sex	*Date 1st Op.*	*Comm. Op.*	*Valve Size Accomp.**	*Calc.*	*Rheum. Find. Append.*	*Period of Improvement (years)*	*Interval Between Ops. (Approximate Years)*	*Date 2d, 3d Op.*	*Valve Size Found***	*Calc.*	*Final Valve Size*
7 S. S. 41 F	7/27/48	1 (ant.)	1½ F	No	Neg. giant cells	4	6	6/7/54	Fingertip	No	2 F
8 S. M.* 49 F	3/19/51	1 (ant.)	2 F	No	Neg.	3.5	4	1/31/55	Fingertip	Slight	1¾ F
9—F. B. 23 F	2/27/50	2 (both)	2½-3 F	No	Neg.	2.3	5	4/23/55	1½ F	No	1½ F
10—F. R. 39 M	7/14/52	1 (ant.)	2 F	Yes	Neg.	1.5	3	6/7/55	Fingertip	Yes	2½ F
11—A. S. 33 F	9/25/52	1 (ant.)	1½ F	No	Aschoff nodules	1	3	8/12/55	Fingertip	No	2 plus F
12—M. L. 39 F	8/28/51	1 (ant.)	1½ F	No	Neg.	2	4	10/10/55	Fingertip	No	2 F
13—M. S.** 51 F	11/25/49	(1 ant.)	1½ F	No	Neg. (hypertrophy)	3	4	9/21/55	Fingertip	No Slight	2 F 2 plus F
14—R. H. 43 F	3/15/51	1 (ant.)	1½ F	No	Not done	4	4.7	12/23/55	Fingertip	Moderate	2 F
15 L. M. 42 F	4/14/53	1 (ant.)	1½ F	Yes	Aschoff nodules	2	3	2/6/56	6 mm. length	Marked	?
16 C. M. 27 F	9/2/52	2 (ant.) Post. Slt.	1½ F	No	Neg.	2	3.5	2/21/56	Fingertip	No	2 F
17—M. D'A. 42 F	8/23/52	1 (ant.)	1½ F	No	Neg.	3	3.5	3/2/56	Fingertip	No	2 F
18 E. W.† 37 F	6/29/50	1 (ant.)	1½ F	No	Neg.	0.4	0.4	11/20/50	1.5 cm. (post. com. opened)	No	1½ F
						4.5	5.5	5/21/56	Fingertip	No	1½ F
19—L. L. 46 F	4/8/53	1 (ant.)	1½ F	No	Neg.	3	3.3	7/10/56	Fingertip	No	2 F
20 C. W. 40 M	6/5/52	1 (ant.)	1½ F	Yes	Lymphocytic infiltration	2.5	4	7/22/56	Fingertip	Yes	2 F
21 C. D. 47 F	10/27/50	2 (partial)	1½ F	Slight	Aschoff nodules	5	5.7	7/18/56	One finger	Yes	2 plus F
22 S. J. 48 F	6/30/52	1 (ant.)	1½ F	No	Aschoff nodules	3	4	8/20/56	Fingertip	No	1½ F

*Two operations for *recurrent* stenosis. **Three operations for *recurrent* stenosis.
†Scale of Approximation: Fingertip, 0.5 to 1 sq. cm.; 1 Finger, 1.5 sq. cm.; 1½ Finger, 2.5 to 3.5 sq. cm.; 2 Finger, 4 to 6 sq. cm.

TABLE 1C.—*Summary of Remaining Cases of Proved Recurrent Stenosis*

	First Operation									Last Operation		
Case No., Age & Sex	*Date of First Operation*	*Commissures Opened*	*Valve Size Accomplished*	*Calcification*	*Rheumatic Findings at Biopsy of Appendage*	*Period of Improvement, Years*	*Interval Between Operations, Years*	*Mitral Gradient Before 2nd Op. mm/Hg.*	*Date of 2nd or 3rd Operation*	*Valve Size*	*Calcification*	*Final Valve Size*
23—J. M. F (19)	11/3/52	1 ant.	1½ F	No	Negative	3	4	27	10/24/56	FT	No	2 F
24—H. W. F (42)	12/7/50	½" ant. ¼" post.	?	Yes	Negative	4	6	25	11/29/56	FT	Yes	2 F
25—C. L. F (28)	9/25/51	1 ant.	1½ F	No	Aschoff nodules	4	5.5	11	1/16/57	1 F	No	2 F
26—E. P. M (43)	8/2/51	1 ant.	1½ F	Yes	Negative	2	5.4	8	1/18/57	FT	Yes	95% of normal
27—M. H. F (55)	9/29/52	1 ant.	1¾ F	No	"Chronic" Myocarditis	3	4.4	—	2/21/57	1 F	No	2 F
28—G. M. M (55)	2/1/51	1 ant.	1½ F	Yes	Negative	5	6	—	2/28/57	FT	Yes	95% of normal
29—M. C. F (53)	5/12/52	1 ant.	1½ F	No	Negative	3	3.8	—	3/4/57	1 F	Yes	2 F
30—C. V. F (35)	8/26/51	1 ant.	2 F	No	Negative	2	5.5	23	3/5/57	FT	Yes	2 F
31—R. L. F (40)	10/15/53	1 ant.	1½ F	Yes	Negative	2.5	3.4	19	3/6/57	1 F	Yes	100% of normal (both horns)
32—E. Q. F (39)	3/15/55	2"	1½ F	No	Negative	1	2	20	3/19/57	FT	Yes	95% of normal
33—L. L. F (28)	3/2/53	1 ant.	2 F	Yes	Aschoff nodules	3	4	—	3/25/57	1 F	Yes	85% of normal
34—F. M. F (49)	3/17/52	1 ant.	1½ F	No	Negative	4	5.2	15	5/29/57	FT	Yes	95% of normal
35—A. G. M (41)	3/4/53	1 ant.	1¾ F	Yes	?	3	4.2	12	5/30/57	FT	Yes	2 F
36—D. W. F (44)	3/2/53	1 ant.	?	No	?	2	4.3	—	6/23/57	FT	No	85% of normal
37—J. H. M (34)	9/25/52	1 ant.	2 F	No	Aschoff nodules	1	4.9	—	7/19/57	FT	No	100% of normal (2½ F)
38—J. S. M (36)	6/26/52	1 ant.	1½ F	Yes	Negative	4	5.1	7	8/5/57	FT	Yes	95% of normal
39—F. C. F (37)	8/21/52	1 ant.	1½ F	Yes	Aschoff nodules	4	5	22	8/21/57	FT	Yes	100% of normal
40—L. M. F (38)	7/19/54	both	1½ F	Yes	Negative	1	3	13	10/7/57	1 F	Yes	2½ F (75%)
41—F. B. F (48)	1/5/54	1 ant.	1½ F	Yes	Negative	2	3	14	10/10/57	⅓ F	Yes	95% of normal
42—C. W. M (46)	10/24/52	1 ant.	1¾ F	Yes	Negative	4	5	18	10/14/57	1 F	Yes	100% of normal
43—E. B. F (44)	12/6/51	both	2 F	No	Negative	5	6	—	10/26/57	1 F	No	85% of normal
44—C. M. F (50)	5/6/52	1 ant.	1½ F	No	Negative	1	5	11.5	11/11/57	1 F	No	1½ F

year of patients subjected to valvotomy, and anticipated that fifteen years will be necessary to appreciate the full "natural" recurrence rate of mitral stenosis (a total of perhaps 30 per cent!).

In addition to our own cases, in the past year alone, 11 other patients have been reoperated on who were originally operated on at other hospitals and by other surgeons. They are not included in this study, because it is difficult to evaluate the changes in valvular size as estimated and reported by other surgeons. Perhaps not all patients in this group had "true" recurrent stenosis as defined by Belcher.[3] In at least 2 of them, only slight symptomatic relief had been noted after the first operation. After the second operation, however, performed from the right, both were greatly benefited.

It should be noted that at this moment, across the United States in general, most surgeons are opening only the anterior commissures in the majority of patients. The posterior commissure may be tried, but if this proves difficult a limited opening is usually accepted. In our opinion, the recurrence rate in these patients will be similar to that of our own earlier left-sided operations.

Reasons for the Development of Recurrent Stenosis.—In our experience, the

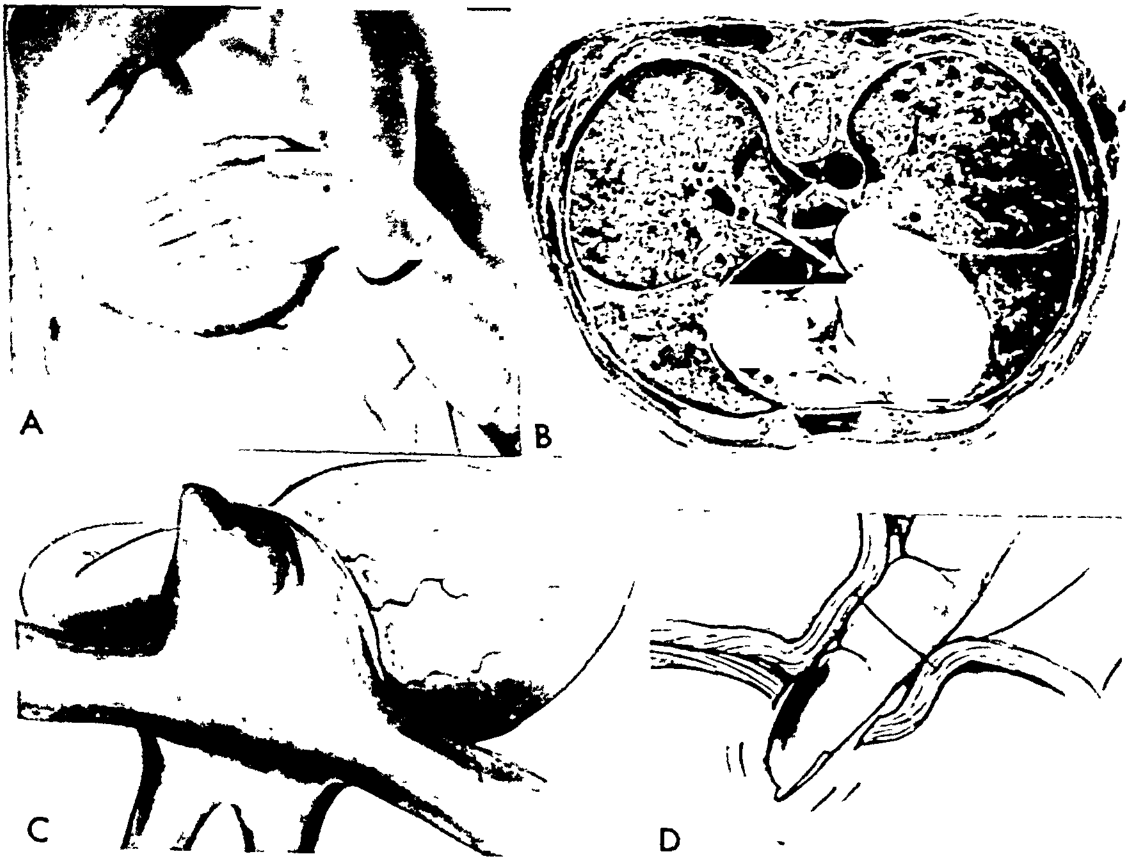

Fig. 2.—*A*, right thoracic submammary incision. *B*, anatomic cross section of thorax, showing accessibility of mitral valve from right (straight arrow). *C*, diagram showing site of entrance (arrow) in interatrial sulcus on right side of heart. Pulmonary veins are posterior and right atrium and venae cavae anterior. *D*, finger entering left atrium after incision is made within confines of purse-string suture placed about this groove.

TABLE 2.—*The Increasing Incidence of Recurrent Mitral Stenosis per Year: A Comparison of the Date of Initial Operation with That of Reoperation or Death (6 Cases)*

Year of Reoperation	*Year of Original Operation*								*Total*
	1948	*1949*	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	
1954	1								1
1955			1	4	2				7
1956			3	1	5	2			11
1957		1	1	5	8	6	3	1	25
Total	1	1	5	10	15	8	3	1	44

cause of this untoward development is *inadequate surgical mobilization of the valve.*[8] (In none of our cases was rheumatic reactivation the apparent cause of the recurrent stenosis). There are several reasons for frequent failure of cardiac surgeons to open both commissures.

In the first place, it is difficult to open the posterior commissure accurately by the left-sided approach, because the site of entrance of the finger is to the side of the valve. In contrast, the right-sided approach brings the finger directly above the valve and in the long axis of the left ventricle (Fig. 3, *A* and *B*). Even since we obtained bilateral experience, we have continued to encounter difficulty in opening the valve well from the left side when we are forced to use this approach because of concomitant disease. (In 1955, one of us (C.P.B.[9]) described trying the posterior commissure when standing at the opposite side of the table, but even this maneuver has not been efficacious in most cases.) Obviously a unicommissural mobilization of the valve is less satisfactory than a bicommissural one (Fig. 4, *A*, *B*, *C* and *D*).

Although we have advocated the right-sided approach in order to render a bicommissural opening routinely feasible,[10]

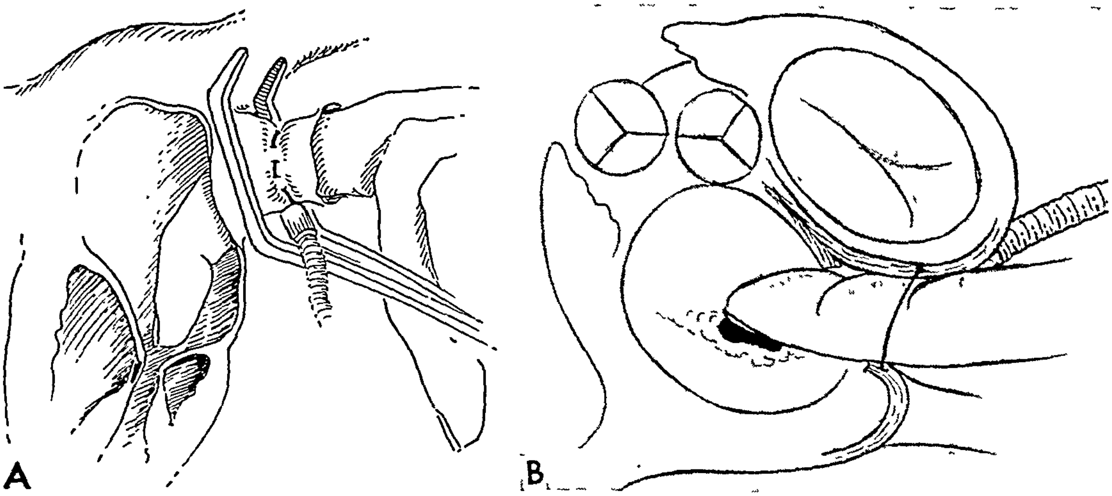

Fig. 3.—*A*, "crooked-fingered" left-sided approach brings finger into atrium above and *to one side* of the valve, so that pressure and instrumentation can be applied with accuracy to anterior commissure only. *B*, right approach, by which left index finger is directed in axis of left ventricle and bicommissural digital pressure and instrumentation are facilitated.

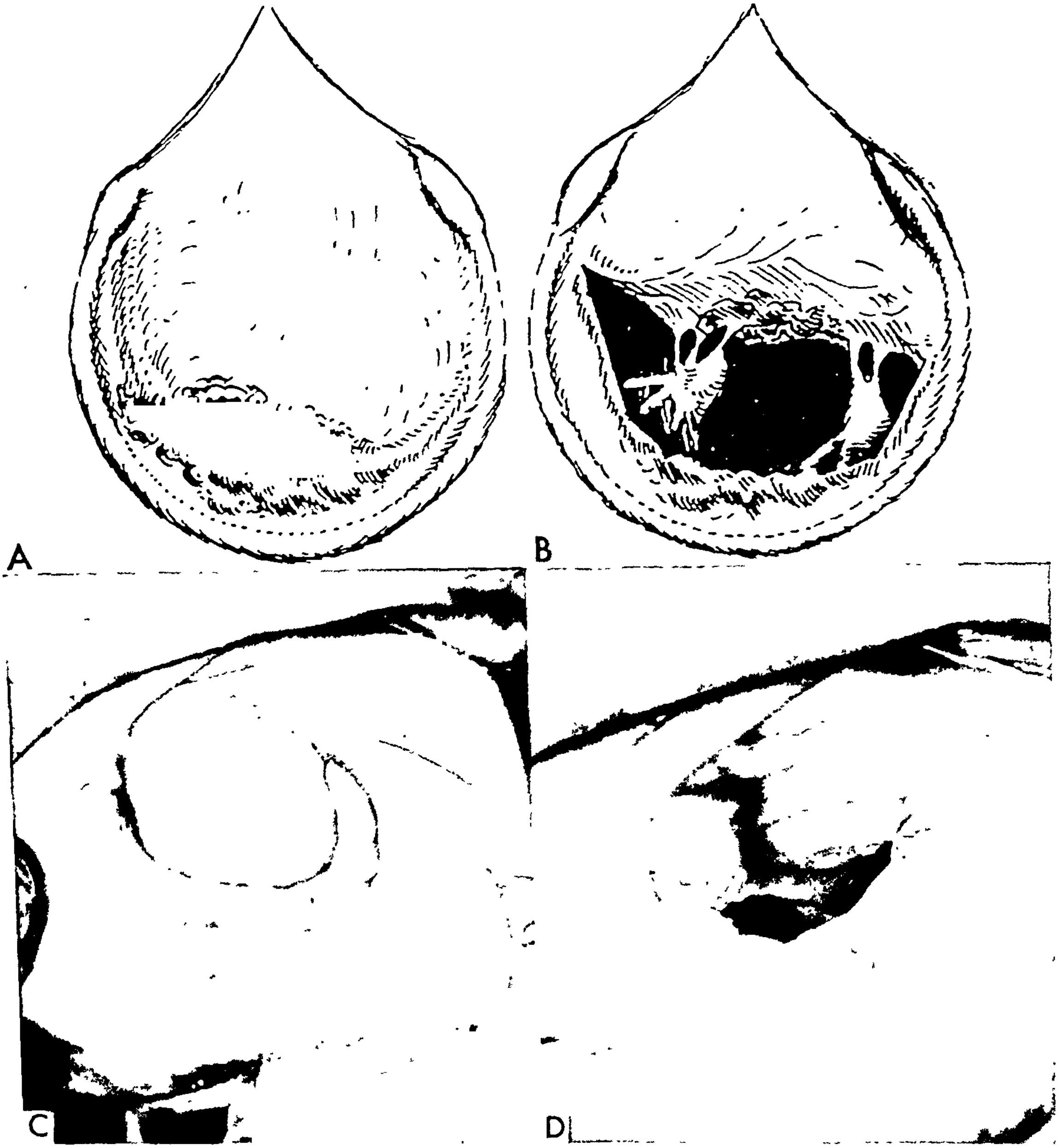

Fig. 4.—*A*, usual "commissurotomy" from left side. Valve is split anteriorly "to the annulus" (but does not follow line of leaflet adherence to its full, curving, arcuate extent). Opening is a "finger-and-one-half," which gives symptomatic relief. *B*, *diagram of full bicommissural opening of the* valve, possible and in fact accomplished in 80 per cent of our patients who are operated on from right side. *C*, actual photographs of a stenotic valve that has been fully opened at both extremities so that septal leaflet, although stiff along its edge, falls fully away in diastole. *D*, producing a near-normal opening which, because of the (neostrophingic) mobilization, will have less tendency toward recurrence of stenosis.

many surgeons have hesitated to adopt it because it requires a somewhat greater exhibition of surgical skill than do the other procedures. There is no appendage on the right side of the left atrium through which a finger can be inserted.

TABLE 3.—*Percentage of Patients with Recurrent Stenosis Among All Survivors for Each Calendar Year of Our Operative Intervention for Predominant* Mitral Stenosis*

Year of Initial Operation	*Number of Survivors*	*Number of Patients with Later Recurrence*	*Percentage of Patients with Recurrence*
1948	2	1	50
1949	12	1	8
1950	78	5	6
1951	208	10	5
1952	298	15	5
Total for first five years (1948-1952)	598	32	5
1953	323	8	2.5
1954	248	3	1
1955	220	1	0.5
1956	218 plus	0	0.0
Overall total (1948-1956)	1607	44	3

*Pure mitral stenosis, or with other insignificant lesions, i.e., minor mitral insufficiency, minor tricuspid insufficiency, etc.

We lost two of our earlier patients before we learned how to control hemorrhage by this approach (Fig. 5, *A, B, C, D* and *E*). Anatomically, the valve is both rotated (Fig. 6, *A* and *B*) and presents at a different angle when palpated from the right side. Probably the area must be explored by this approach in at least 10 cases before significant familiarity with the anatomic and the technic of relieving the stenosis will be attained.

These technical considerations so far have prevented all but a few of the more able cardiac surgeons,[11] who do a large amount of work of this type, from even attempting the new approach.

Another reason for a poor surgical mobilization of the valve is that until recently there has been very poor understanding of the importance of a free and separate chordopapillary supporting system (Fig. 7, *A, B, C* and *D*). Since recognition, and much less, separation of fused subvalvular structures is difficult from the left-sided approach, few have undertaken it.[12]

A third reason for the compromised technical result frequently "settled for" in operations from the left is low blood pressure. When an anesthetized patient with severe mitral stenosis is placed in the lateral position, which is favored for operating from the left side, the blood pressure falls. When the valve is manipulated, an alarming further drop may occur, causing the surgeon to terminate the procedure as soon as even a small improvement in the valvular opening is obtained, hoping thus to have a live patient after the operation.

With the patient flat on his back during operation by the right thoracic approach, such hypotension occurs less frequently. It is not uncommon at our clinic to work alternately digitally and instrumentally upon the valve for as long as one hour or more. Naturally, a better procedure can be carried out in this length of time.

Finally, the technical difficulty encountered in achieving even a small opening

TABLE 4.—*Comparison of Calcification in Patients with Recurrent Stenosis and Calcification in Patients Operated on for Mitral Stenosis Generally*

Years	*Type of Cases*	*Number of Cases*	*Percentage Calcified*
1948-1954	Left-sided commissurotomy (all cases)	811	39
Sept. 1955-Jan. 1957	Right-sided neostrophingic mobilization (all cases)	227	33
1948-1954	Recurrent stenosis cases: mitral operations	44	36
1954-1957	Recurrent stenosis cases: secondary operations	44	64

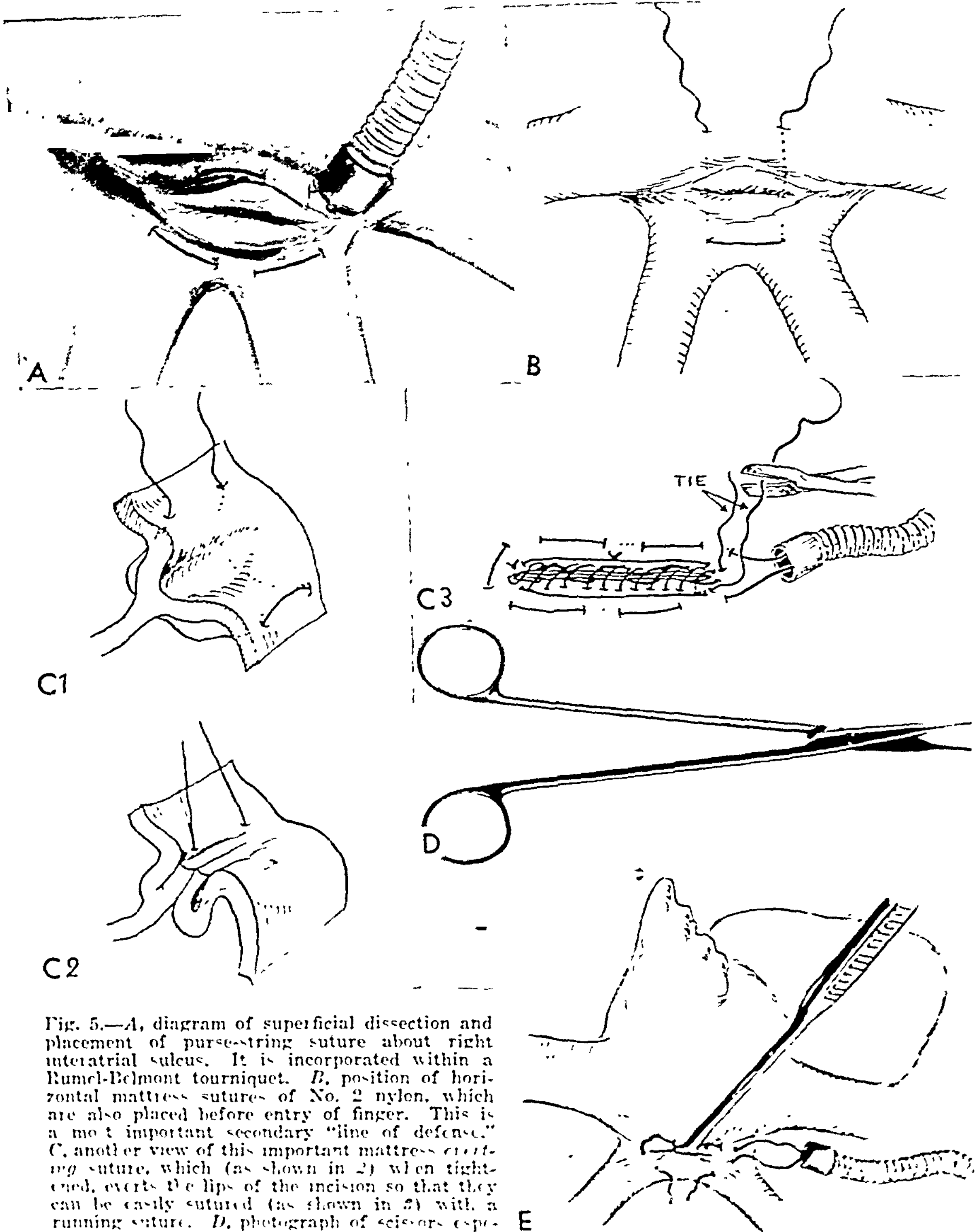

Fig. 5.—*A*, diagram of superficial dissection and placement of purse-string suture about right interatrial sulcus. It is incorporated within a Rumel-Belmont tourniquet. *B*, position of horizontal mattress sutures of No. 2 nylon, which are also placed before entry of finger. This is a most important secondary "line of defense." *C*, another view of this important mattress *everting* suture, which (as shown in *2*) when tightened, everts the lips of the incision so that they can be easily sutured (as shown in *3*) with a running suture. *D*, photograph of scissors especially designed by one of us (D.P.M.), with sharp points and slightly sharpened external edges for entering heart inside purse-string suture without cutting it. *E*, maneuver for controlling hemorrhage from groove with pair of Nelson multiple-toothed forceps if purse-string should break or inadvertently be cut.

TABLE 5.—*Stages in the Development of the Present Operation for Mitral Stenosis*

Year	*Technic*	*Era*
1948	Instrumentation with a knife on a doubly gloved finger	Initial period
1949	Digital separation of the commissures	
1950	Avoidance of insufficiency at the posterior commissure	Unicommissural period
1951	Use of tourniquets on the head vessels to prevent cerebral embolization	
1952	Recognition of the importance of freeing subvalvular fusion	
1953	Initiation of the bare finger technic	
1954	Development of the right thoracic approach	Bicommissural period
1955	Routine bicommissural surgery	
1956	Change in the conception of the operation as a lengthening of the valve slit ("commissurotomy") to a rehinging of the septal leaflet ("neostrophingic mobilization"). Routine Bipolar complete subvalvular mobilization.	Neostrophingic mobilization
1954-1957	Increasing use of instrumentation from 50% of cases to 80%, to insure routine opening of *both* commissures completely.	
1957	Extension of the arcuate line of valve opening *beyond* the normal limits at each end of the valve to gain mobility of the septal leaflet, without the production of insufficiency.	

of the valve may be great. The commissures may be fused and attached in a common mass to the subvalvular structures (Fig. 7). They may be heavily calcified (Table 4), and the lines of normal cleavage may be difficult to determine. Both in mobilizing such a valve and in opening a more flimsy one in which some regurgitation already may be present, the day-to-day familiarity and technical facility of the cardiac surgeon who does a considerable number of operations may prove essential.

Prevention of Recurrence: Improvement in the Operation.—In 1952, we first began to recognize the importance of splitting the fused subvalvular supports to obtain better function (Table 5). In 1953, at the suggestion of Eric Husfeldt of Denmark, we first employed a bare finger (this in marked contrast to our original use of a double-gloved finger with a knife worn between the layers).[13]

TABLE 6.—*Changes in Heart Size in the First 200 Patients Surviving Mitral Commissurotomy and Followed Five to Eight Years*[4]

Change in Heart Size	*Percentage of Patients*
Same	70
Diminished (includes 3% markedly diminished)	15
Increased	15
Total	100

A year later, in 1954, because of other concomitant right-sided pathologic conditions, specifically carcinoma of the lung and tricuspid stenosis, we began to use the right-sided approach to the mitral valve. Recognizing the greater facility with which bicommissural mobilization of the valve may be accomplished by this approach, we began using it routinely in all cases of predominant mitral stenosis in 1955.

Later, in 1955, the senior author evolved the concept of deliberately extending the normal arcuate line of valve closure somewhat beyond the normal limits of the commissures into the more flexible portion of the valve (Fig. 8). Since most calcification and stiffening occurs immediately around the orifice or within 1 cm. of it, such an extension allows the septal leaflet, although stiff at its edges, to bend freely upon its more basal flexible substance. (One of our medical colleagues

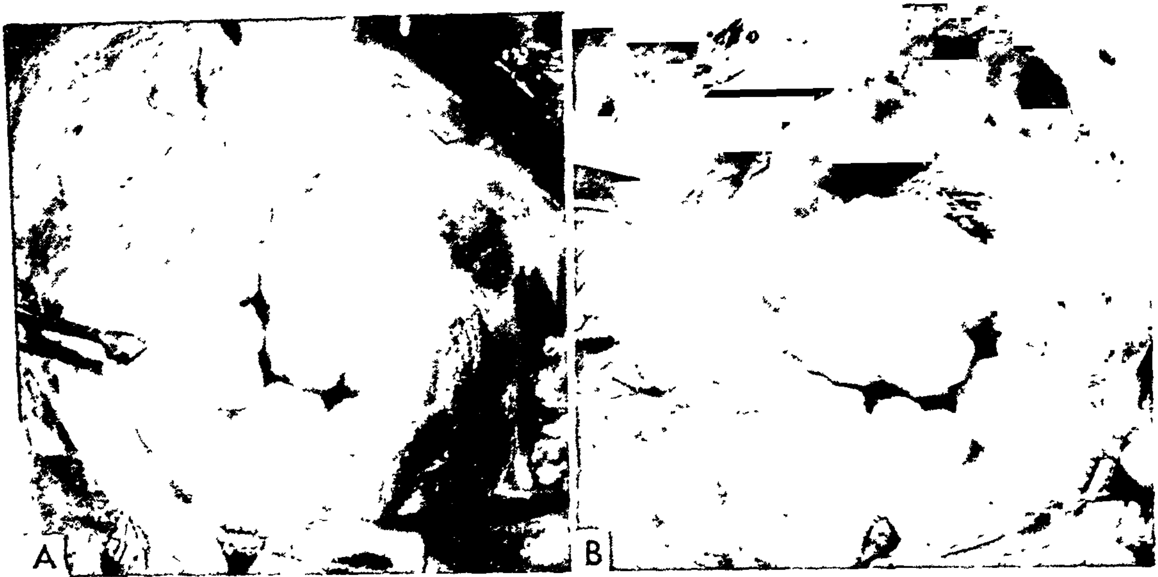

Fig. 6.—*A*, photograph of normal valve (compare with *C* and *D*, Figure 4) as it presents with patient operated on by the older left-sided approach (lying on his side), as viewed from atrial aspect. *B*, in contrast, with patient lying on his back for right thoracic approach, the mitral valve anatomy is anatomically almost symmetric with respect to horizontal.

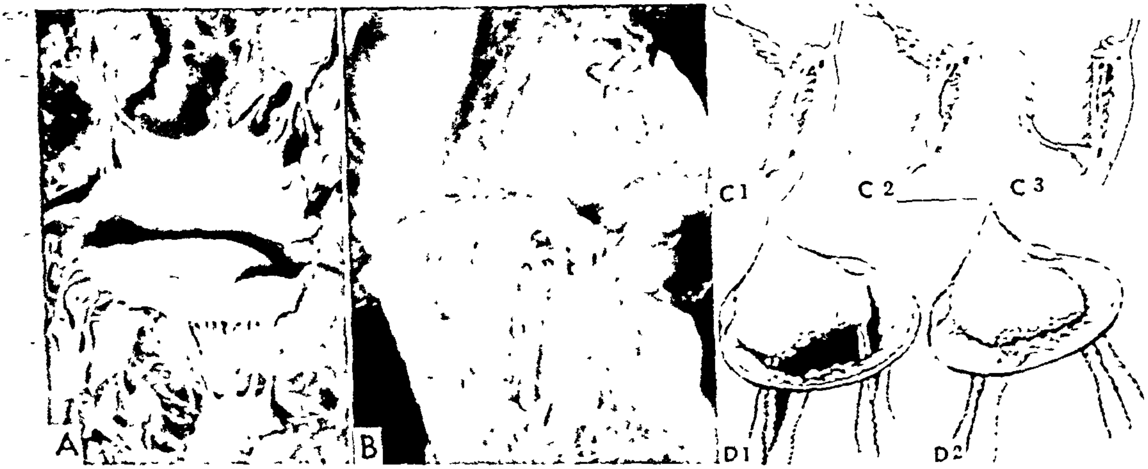

Fig. 7.—*A*, photograph of normal subvalvular chordopapillary supports of mitral valve. (Papillary muscles have been split longitudinally.) Note that *each leaflet has a free and separate system* of chordae at each pole of valve. *B*, subvalvular stenosis with complete cross-fusion of chordopapillary system, as well as "elongation" in continuity of leaflets into papillary muscles. *C*, cross section of diagram of subvalvular fusion (*1*) and technic of its relief (*2* and *3*) by end-on digital splitting of chordae and papillary muscles to ventricular wall to allow complete mobilization of the septal leaflet. The fixed and rigid mural leaflet can not be rendered mobile. *D*, bicommissural mobilization (*1*) of mitral valve, with bipolar splitting (*2*) of subvalvular supports (neo-strophingic mobilization). Note that septal leaflet is hung between two of aortic valve cusps, annulus being deficient in this area, as pointed out by Zimmerman.

has suggested calling this the "hood operation" because of the similarity of the movement to the opening of an automobile hood.)

This rehinging of the septal leaflet has been termed *neostrophingic mobilization* (from the Greek "neo" meaning "new" and "strophings" meaning "turning").

When to this mobilization of the leaflet is added complete separation of the

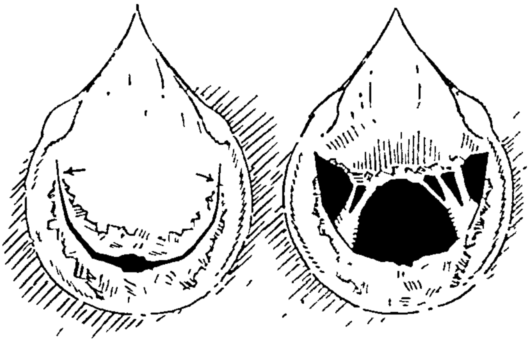

Fig. 8.—Diagram to show extension of commissural opening slightly beyond normal end of commissures (indicated by arrows), in order to obtain mobility in calcified septal leaflet. It is expected that this extension into nearly normal tissue at base of septal leaflet will also serve to retard recurrence of stenosis.

fused subvalvular structures, the septal leaflet, although securely tethered against regurgitation, becomes capable of falling away completely from the mural shelf during the opening of the valve. (See Fig. 4, *B* and *D*).

Recently, because of concomitant aortic stenosis (which we prefer to treat by an open technic), we have had the opportunity to relieve recurrent mitral stenosis under direct vision. Lillehei[14] also has mentioned this condition as an indication for "open heart" surgical procedures. At present, however, it is our opinion that the risk of a closed operation is less and that, in our hands, a superior mobilization of the valve as illustrated can be carried out by the closed method.

Much of the early criticism of the operation by Soloff[15] and others now is understandable in view of the fact that our early operation was capable of enlarging the valvular aperture enough to relieve symptoms but not enough to remove the obstruction or the signs of it, such as the murmur, and enlargement of the heart (Table 6). We now know that even a small amount of opening of the valvular orifice will relieve severe symptoms, but also that an equally small amount of refusion will result in their reappearance.

The usual size of the valve observed at operation is 1 sq. cm. or less.[6] The average orificial size provided by the old left-sided approach, as determined by catheterization, was less than 2.5 sq. cm. By our new operation (neostrophingic mobilization) we can obtain a valve area of the order of 4 to 6 sq. cm. in 80 per cent of the cases, which produces objective as well as subjective evidence of relief of the obstruction. In 50 per cent of the cases the diastolic murmur has been abolished.

SUMMARY

Mitral stenosis has recurred in 44 of our original 1,607 patients undergoing mitral commissurotomy by the older left-sided approach. It is apparent that our early operations enlarged the mitral orifice enough to give relief of symptoms, but not usually enough for objective evidence of relief of the obstruction as evidenced by a change in the size of the heart or disappearance of the diastolic murmur. Gradual reclosure of these scarred valves may take place over a period of years (averaging over four years in this series) without a recurrent episode of rheumatic fever.

It is now possible routinely to perform an operation for mitral stenosis that effectively returns the valve to a normal functional capacity. This new procedure is as little like the old commissurotomy technics (see Fig. 4, *A* and *B*) as a contemporary automobile is like a Model T Ford. The new operation (neostrophingic mobilization of the septal leaflet), which usually can be performed only by the right thoracic approach, entails opening of both commisures to their full curving extent and well into normal flexible valve tissue, so that the new septal leaflet is freely hinged at its base. In addition, it is essential to establish complete bipolar separation of the cross fused subvalvular chordopapillary structures.

It is expected that this more modern technic will reduce the incidence of recurrent mitral stenosis to a very low level in the future, although it is probable that more than 20 per cent of the patients who have been surgically treated in the past, or who now are being operated upon from the left side by the less experienced surgeon, will return at some time in the future with recurrent mitral stenosis.

RÉSUMÉ

Une sténose mitrale récidivante s'est produite dans 44 cas où les auteurs avaient pratiqué une commissurotomie mitrale par la voie d'approche gauche classique. Il s'est révélé que les opérations antérieures n'avaient agrandi l'orifice mitral que juste assez pour soulager les symptômes, et en général pas assez pour apporter une preuve objective de soulagement de l'obstruction, comme l'ont montré la modification de la dimension du coeur ou la disparition du murmure diastolique. La fermeture graduelle de ces valvules cicatricielles peut s'opérer en plusieurs années (en moyenne plus de 4 ans dans la série de cas ici présentée), sans récidive de fièvre rhumatismale.

Il est maintenant possible d'opérer une sténose mitrale avec retour à la normale de la fonction valvulaire. Cette nouvelle technique est très différente des anciennes (fig. *4A* et *B*). Elle ne peut en général être pratiquée que par la voie d'approche thoracique droite, et comporte la réouverture complète des deux commissures (même un peu au-delà des valvules calcifiées), et la séparation bipolaire complète des structures chordopapillaires sous-valvulaires.

Il est vraisemblable que cette technique moderne réduira à un taux très bas le pourcentage de sténoses récidivantes, mais il est probable que plus de 20% des patients ayant été opérés selon les anciennes méthodes, ou qui sont opérés actuellement par la voie d'approche gauche par des chirurgiens n'ayant pas une expérience suffisante, présenteront à nouveau des récidives.

RESUMEN

Dice el autor que entre los enfermos a los que hace tiempo practicó una comisurotomía por el antiguo método de acceso por vía izquierda, 44 han recaído y padecen de nuevo estenosis mitral.

Está ahora claro que en las primeras operaciones se ensanchaba la válvula lo suficiente para que cediesen todos los síntomas, pero no en cambio para que remitiesen los datos objeticos, entre llos el soplo diastólico y la dilatación cardíaca.

Las válvulas vuelven a estenosarse, poco a poco, en períodos que duran años (más de 4 años como media en los casos presentados) y sin que aparezcan nuevos episodios de fiebre reumática.

En la actualidad puede operarse la estenosis mitral por métodos que aseguran que la válvula recobre su capacidad funcional normal. El procedimiento nuevo se paraece a las técnicas antiguas menos que un automovil moderno al Ford modelo T. La nueva operación (movilización neostrofíngica de la valva septal) se hace generalmente por la vía de acceso derecha del tórax, y consiste en cortar las comisuras en toda su extensión (e incluso más allá si las válvulas están rígidas y calcificadas) y en separar totalemente las estructuras cordopapilares entrecruzadas bajo las válvulas en ambos lados. Se espera que este nuevo procedimiento haga que en el futuro se reduzcan el mínimo las recidivas, mientras que quizás más de un 20% de los operados antiguamente o en la actualidad por cirujanos poco informados que continúan con la vía de acceso izquierda, recaerán tarde o temprano en una nueva estenosis valvular.

RIASSUNTO

In 44 casi operati di commissurotomia per stenosi mitralica si è avuta una recidiva della stenosi. E' probabile che gli interventi eseguiti con la tecnica tradizionale determinino un allargamento dell'orificio mitralico sufficiente a migliorare i disturbi ma non tale da far cessare completamente l'ostacolo e far scomparire l'ipertrofia cardiaca e il soffio. Può, quindi, prodursi un graduale riavvicinamento delle valvole cicatriziali, in uno spazio di tempo che può durare qualche anno (4 anni in media nella serie dell'autore) anche senza ripresa della malattia reumatica.

Oggi è possibile operare la stenosi mitralica in maniera da restituire la valvola alle sue condizioni anatomiche e funzionali normali. Questo nuovo metodo, che sta a quello tradizionale come una vettura moderna a un modello di anteguerra, si può eseguire solo per via transtoracica destra e comprende la riapertura di entrambe le commessure per tutta la loro estensione e anche oltre, quando si tratta di valvole calcificate e rigide, e la completa separazione delle strutture cordopapillari sottovalvolari.

Si ritiene che questa nuova tecnica potrà ridurre la frequenza delle recidive a una quota minima, mentre è probabile che oltre il 20% dei malati trattati chirurgicamente in passato o anche ora con le vecchie tecniche vadano incontro, prima o dopo, ad una ricomparsa della stenosi mitralica.

ZUSAMMENFASSUNG

Das Wiederauftreten einer Mitralstenose wurde bei 44 Prozent der von den Verfassern mit mitraler Kommissurotomie (unter Benützung des alten Zugangsweges von links) behandelten Patienten beobachtet. Es hat sich herausgestellt, dass die früher angewandten Operationsverfahren zu einer Erweiterung der Mitralöffnung führten, die gerade zur Behebung der Symptome ausreichte, ohne jedoch zu einer etwa durch Veränderung der Herzgrösse oder durch das Verschwinden des diastolischen Geräusches objektiv nachweisbaren Beseitigung der Obstruktion zu führen. Die narbigen Klappen können sich im Laufe einer Reihe von Jahren (in der vorliegenden Serie durchschnittlich vier Jahre) ohne das Auftreten eines neuen rheumatischen Schubes wieder schliessen.

Es ist jetzt möglich, zur Behandlung der Mitralstenose eine Operation auszuführen, die eine normale Funktionstüchtigkeit der Klappe wiederherstellt. Dieses neue Verfahren ähnelt der alten Kommissurotomietechnik so wenig wie ein modernes Automobil einem Modell von vor 50 Jahren. Die neue Operation (Mobilisierung des Septumblättchens), die sich gewöhnlich nur durch den Zugang von der rechten Brustseite ausführen lässt, besteht in einer Wiedereröffnung beider Kommissuren über die gesamte Länge ihrer Kurvaturen (bei Verkalkung oder Versteifung der Klappen sogar etwas darüber hinaus) und in einer völligen bipolaren Trennung der gekreuzten papillären Gebilde unterhalb der Klappe.

Es ist zu erwarten, dass diese moderne Technik die Häufigkeit rückfälliger Stenosen erheblich herabsetzen wird. Wahrscheinlich werden aber mehr als 20 Prozent der in der Vergangenheit chirurgisch behandelten Kranken oder derjenigen, die jetzt von weniger erfahrenen Chirurgen mit linksseitigem Zugang operiert werden, früher oder später mit einer neuen Mitralstenose zurückkehren.

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Now, while certain physicians were performing blood transfusions, and a large number were practising blood-letting, a small—shall we say, select—group were carrying out an entirely different kind of work. They were investigating the blood itself. A Dutch physician, Jan Swammerdam, better known as a naturalist, since he seemed more interested in snails and clams than in patients, one day in 1658 examined some blood under a microscope and found to his surprise that it was not a homogenous fluid, but a clear fluid in which floated innumerable small red globules—the red blood-corpuscles. A few years later Marcello Malpighi, a physician in Italy, saw the red corpuscles in the minute vessels of the lungs and discovered the capillaries. Malpighi, whose name has been mentioned in the previous chapter, is often regarded as the greatest microscopist of all times. Yet he could see with his eyes as well as with the microscope, and it is a matter of some historical interest that he founded, in 1686, the science of taking finger-prints—a science whose later development has meant so much in the detection of crime.

—*Major*

Ovarium Disjunctum

Report of a Case

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NEW YORK CITY, NEW YORK

The author reports an unusual case, in which an ovarian cyst, existing beside two normal ovaries at the usual anatomic site, was removed from the mesocolon. The patient was a woman aged 46, whose only pregnancy had terminated in spontaneous delivery at full term seventeen years earlier and who had previously undergone operation for removal of a submucous pedunculated fibroid. The ovarian cyst present on admission to the author's service was the size of a human head and at operation burst spontaneously, spilling turbid, milky fluid. It was removed, and the patient made a good recovery. In the author's opinion, this cyst was an ovarium disjunctum, or "third ovary," and the case merits reporting not only because of its rarity but because of the many difficulties encountered both in diagnosis and in treatment.

WHILE mesenteric cysts are rather rare, ovarian cysts in the mesocolon are even more uncommon. Ovarian tumors seldom occur outside the area of the normal location of, and completely separated from, the ovaries. The further away from the ovaries, the rarer they are. These cysts, called *ovarium disjunctum* (Schottlaender) or "third ovary," have been described by Schmid[1] and Bondy[2] in the German literature. Dowd,[3] in a survey of the American literature up to 1900, noted that of all the mesenteric cysts reported only 1 proved to be of ovarian origin. Cantor and Kleinert,[4] in 1952, reviewed the cases in Grace Hospital, Detroit, and found only 1 proved ovarian cyst in the mesentery of the transverse colon; the patient in this instance had undergone a left ovarian cystectomy four years earlier. Jirka and Samuels,[5] in 1955, reported a large ovarian papillary cystadenoma removed from the mesentery of the sigmoid in a patient who had undergone a left salpingo-oophorectomy twenty-four years earlier. They assumed that the mass originated from some rest of the previously removed left ovary. In my opinion it was an ovarium disjunctum. The case to be here reported is the third, described in the literature, of an ovarium disjunctum located in the transverse colon. It merits reporting because of its rarity and the intricacy of diagnosis and surgical management.

Consistent with the development of the ovaries from the wolffian body, a large and embryologically important structure occupying the posterior and dorsal portion of the primitive peritoneal cavity, these tumors occur in the retroperitoneal region

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on both sides of the abdomen within the mesentery of the colon. They follow the pathway, called "Keimbahn," of the germinal epithelium down to the site of final arrest of the ovaries in the pelvis. It is possible that the germinal epithelium of the ovary leaves small pieces of developing tissue at any site along this route.

REPORT OF CASE

E. K., a 46-year-old white woman, was admitted to Sydenham Hospital, New York City, on March 21, 1957, with the complaint of progressive abdominal enlargement for the past two months. No associated menstrual abnormalities and no abdominal pain were present. The patient's only pregnancy had ended with a spontaneous delivery at term seventeen years earlier. The menarche had occurred at the age of 11. The interval between menstruations was twenty-four days and their duration five days. The menstrual discharge was rather profuse, with clots. The most recent period had occurred on March 10, and had been as usual.

The patient's mother had died of an abdominal malignant neoplasm; the familial history was otherwise noncontributory. In February 1953 the patient had been hospitalized for removal of a pedunculated submucous fibroid. At that time she had occasional backache and a watery, mucous, bloody vaginal discharge of two months' duration. Pelvic examination revealed a parous introitus; a relaxed perineum; a submucous fibroid 5 by 2 cm., with a thin pedicle leading into the uterine cavity; an open cervix; no enlargement of the uterus, and no adnexal masses palpable. At operation the cervix was observed to be completely open: the mass was pedunculated and its pedicle accessible. A few small fibroid nodules were present, not indicating extensive surgical maneuvers. The submucous fibroid was removed vaginally and a curettage done. Postoperative recovery was smooth. The pathologic diagnosis was "fibroleiomyomatous nodule and endometrial hyperplasia." In December 1953, on routine check-up, a pea-sized mucous polyp was removed from the cervix. The uterus was anteflexed and of normal size. A cystic left ovary was palpable. The patient was seen at six-month intervals until April 1955. During this time she was asymptomatic and the pelvic picture remained unchanged. She was seen again two days before the present admission to the hospital. Examination revealed an ovarian cyst extending almost to the costal arch. The uterus was not well defined as to contour and size. Immediate hospitalization was advised.

On admission the heart, lungs, pulse, respiration and temperature were normal. The blood pressure in millimeters of mercury was 130 systolic and 80 diastolic. The abdomen was ovoid, enlarged by a smooth, globular, cystic, slightly compressible, nontender movable mass probably arising from the pelvis and extending to the xyphoid. Pelvic examination revealed a parous introitus and a relaxed perineum; the cervix was firm, enlarged and clean, with an old laceration on the right; the uterus was anteflexed and enlarged by several fibroids; a large, cystic, smooth, movable tumor was palpable, reaching to the costal arch and apparently not connected with the uterus. It could not be determined whether this mass originated from the left or from the right adnexa.

Urinalysis, blood count, sedimentation rate, blood chemical tests and a roentgenogram of the chest revealed no abnormality. A flat plate of the abdomen showed conspicuous absence of intestinal gas shadows in the midabdomen. This area was filled by a large, somewhat rounded density which extended out of the pelvis up to the level of the first lumbar vertebra. The gas-filled intestines were displaced to the left. No calcifications or opaque fetal parts were demonstrable. Reexamination several days later also showed the gas-filled transverse colon displaced downward and the left kidney upward. An intravenous pyelogram showed prompt excretion of the dye, with good concentration and a normal outline of the collecting systems. The left kidney shadow was displaced upward. The ureters were normal. The bladder showed evidence of extrinsic pressure. A barium enema revealed that the transverse colon was displaced downward, with evidence of extrinsic pressure on its lumen. There was no intrinsic pathologic change.

The preoperative diagnosis was ovarian cyst. On the sixth day after admission to the hospital, with the patient under cyclopropane-oxygen-sodium pentothal anesthesia, a left paramedian incision was made, which had to be extended to about 8 cm. above the umbilicus. There was no free fluid in the abdominal cavity. A large, cystic mass the size of a human head was seen. Its surface was smooth, and it was filled tightly with fluid. At the lower pole and anteriorly it was adherent to the transverse colon. The mass was covered by the mesocolon, which was greatly distended, simulating cobweb-like adhesions. The cyst wall contained many blood vessels of varying caliber. No metastatic lesions were detected. The tumor could be brought up into the incision despite the adhesions. There was no connection between the mass and either ovary. The uterus was moderately enlarged, containing several intramural fibroids. The left ovary was cystic; the right appeared normal. Because of the extreme vascularity of the adhesions, they were dissected most carefully in order to avoid injury to the colon and its arterial blood supply. A firm, fascia-like vascular adhesion on the left upper pole of the mass could not be identified anatomically and was cut between clamps and suture-ligated. Shortly before all the adhesions were freed the cyst burst spontaneously, spilling a turbid, milky fluid over the field. The hole was quickly clamped off and the cyst removed. Exploration of the gallbladder and the right lobe of the liver revealed no metastatic lesions. Gelfoam was used for control of oozing from the mesocolic vessels and below the right margin of the liver. The free edge of the transverse colon was sutured to the upper margin and posterior aspect of the greater omentum at its duplication near the greater gastric curvature. Peritonealization was done and the abdominal wall closed in layers. A transfusion of 500 cc. of whole blood was given. The patient left the operating room in satisfactory condition.

Pathologic Report.—This report described a "voluminous cyst, pink in color, fluctuant in consistency, still measuring 13 cm. in diameter. On section, a greyish and mucinous fluid exudes. The inner wall shows several smaller cystic dilatations measuring 3 to 1.2 cm. in diameter. On section, these cysts contain the same material previously described. The inner wall also shows some yellowish areas." Microscopically, there was a "collagenous connective tissue capsule made up of several layers. The bundles are thick and show hyaline degeneration. The lymphatic spaces are distended. At one side this capsule shows a lining of a large cystic cavity. The lining is composed of tall columnar epithelial cells which disclose increased secretory activity. At many areas the lining discloses hyperplasia of its epithelial cells. Deep in the fibrotic layers are a few glandular acini composed of the same kind of epithelial cells. Another section shows, in addition, heavy infiltration of chronic inflammatory cells, but mostly of lymphocytes. The blood vessels in this area are also dilated, and some of them contain red blood cells." The diagnosis was "pseudomucinous ovarian cyst with marked inflammatory changes in the capsule." A consultation was held with Dr. Motuloff of Woman's Hospital. It was his impression that this was a benign, well differentiated, noninfiltrating pseudomucinous cystadenofibroma of the ovary with marked inflammation of the capsule.

Recovery was uneventful except for some anorexia, nausea and slight fever. Wangensteen suction was maintained for twenty-four hours. There was no abdominal distention. The patient was up and about after the fourth postoperative day. Primary wound healing took place, and the patient was discharged in good condition on the tenth day. Total hysterectomy with bilateral salpingo-oophorectomy in six months was advised.

One week after discharge the patient was readmitted, complaining of vomiting after meals, loss of appetite, a mass in the epigastric region, a sensation of pressure in the upper part of the abdomen and irregular mild pain in the upper quadrants. A surgical consultant observed moderate abdominal distention, especially in the supraumbilical region. A fluctuating, somewhat tender mass was palpable in the epigastrium and both upper quadrants. Other regions were soft. The liver and spleen were not palpable. The bowel sounds were audible. The left paramedian incision was healed.

Intravenous fluids were administered, with Amigen and Berroca C. Urinalysis revealed no abnormality. The value for hemoglobin was 10.3 Gm.; there were 20,600 white blood cells per cubic millimeter, with 90 per cent polymorphnuclears. The sedimentation rate was 40 mm. in one hour. A roentgenogram of the abdomen revealed a huge mass in the epigastrium, extending somewhat more to the left than to the right and displacing the transverse colon and small bowel downward and laterally. A gastrointestinal series showed marked delay of barium passage in the midportion of the stomach, most of the barium collecting in the fundus and cardiac region. When the barium was coaxed below this area one noted a marked compression of the stomach by an extrinsic process situated posteriorly between the stomach and the gas-outlined transverse colon. There was no evidence of intrinsic disease of the stomach or colon. The impression, therefore, was that of a large mass situated posteriorly between the stomach and the colon, projecting considerably into the peritoneal cavity. Its edges, seen in the left side of the abdomen, appeared relatively smooth, as do those of a cystic tumor.

Three days after admission a transverse epigastric incision was made with the patient under general anesthesia. When the abdominal cavity was opened a large amount of clear fluid was observed. When the lesser sac was entered from below an enormous amount of hemorrhagic-purulent fluid was obtained. It was evacuated and drains inserted. The normal pancreas was covered by fibrinous inflammatory exudate. The foramen of Winslow was obstructed by fibrinous masses. The abdominal wall was closed in layers. Micrococci were cultured from the lesser sac fluid. Postoperatively there was prolonged, profuse drainage which gradually diminished. On discharge from the hospital twenty-five days after the operation, the wound was almost healed.

The patient made a good recovery and remained asymptomatic. Several small fistulas with intermittent discharge, however, developed in the right pole of the transverse abdominal wound. On Jan. 13, 1958, with the patient under general anesthesia, total hysterectomy and bilateral salpingo-oophorectomy were done because of a fibroid uterus and to prevent malignant degeneration of the ovaries. The uterus, of a size corresponding to that of a six to eight weeks' gestation, contained three myomas in the fundus. A cystic mass, 2 to 3 cm. in diameter, was in the mesosalpinx of the left tube at the ostium. The abdomen was closed in layers. The right side of the transverse abdominal scar was then excised, with all the sinuses. Four wire knots were removed. The fascia was intact. The wound was closed in layers. The pathologic diagnosis was: "chronic cervicitis with Nabothian follicle; intramural fibromyomata uteri; polycystic ovary (follicle)."

The postoperative course was normal. The patient was discharged nine days after the operation and was last seen on February 5, symptom-free. The abdominal incisions were firmly healed. There was no recurrence of the abdominal mass. Pelvic examination revealed the vaginal vault healed and well supported. There were no pelvic masses, no tenderness and no induration.

COMMENT

This case, besides being rare, is instructive. I assume that similar masses have been observed but have remained unpublished, mainly because they were smaller than the one here described. This report is to point out errors of diagnosis and surgical management which may be avoided by others facing similar problems.

Although the genesis of these cysts is known, the factors responsible for their sudden and rapid growth to remarkable size remain unexplained. The patients of both Cantor and Kleinert and Jirka and Samuels had a history of previous pelvic operations, mainly for adnexal pathologic conditions. In the latter case there was also a fibromyomatous uterus, as in my own case, in which the initial operation consisted in vaginal removal of a submucous fibroid prolapsed through the cervix; the ovaries were intact. The growth of the cyst, therefore, cannot be explained by previous ovarian surgical treatment.

While these authors obtained satisfactory results by removing the cysts without drainage, this should not have been done in our case because of the inflammatory nature of the capsule, a fact which was unknown at the time of operation. It prolonged postoperative morbidity and necessitated a second surgical intervention for drainage. During the primary excision drainage was not considered, because the cyst had been completely removed—just as cysts are extirpated from the broad ligament — although the dissection was difficult. Only the pathologist's report revealed the inflammatory character of the capsule. The fluid contents, spilled when the tumor ruptured, resembled pseudomucinous material, and similar occurrences within the lower part of the abdomen are not an indication for drainage.

The immediate postoperative course seemed to justify my decision for primary closure, but two weeks later the mass recurred and at once caused symptoms of severe gastric irritation. The surgeon, called in for incision and drainage, thought of a pancreatic cyst and at first did not concur in the diagnosis of an ovarian cyst at this site. Autoptic control, however, ascertained the intactness of the pancreas, covered only on its surface by fibrinous inflammatory lesions.

The preoperative diagnosis was also incorrect. The mass that filled the abdomen could not be separated from the uterus and ovaries. A fibromyomatous uterus was palpated, but the ovaries could not be differentiated from the cyst. Roentgenographic examination indicated that the mass was located above the transverse colon. Its capsule appeared "festoony," which is unusual for ovarian cysts but was explained after one had seen the widely separated and stretched fibers of the mesocolon covering the cyst. Neither I nor my colleagues had ever encountered a similar mass, and no one anticipated such a pathologic rarity. The correct diagnosis was missed by not paying sufficient attention to the roentgen signs.

Seven months after recovery from operation for the mesocolonic cyst, hysterectomy and bilateral salpingo-oophorectomy were performed. A fibroid uterus suggesting a 6 to 8 weeks' gestation was not considered a vital indication for hysterectomy; nevertheless, in view of (1) the history of removal of such a large disjointed ovarian tumor, (2) a cystic ovary in the presence of myomas, (3) the patient's age (46 years), and (4) the fact that she had one child, it was decided that the pelvis should be emptied to prevent possible future malignant degeneration. This conclusion appeared well founded.

SUMMARY

1. An ovarian cyst, existing beside two *normal ovaries at the usual anatomic site*, was removed from the mesocolon.

2. As is consistent with the development of the ovaries from the wolffian body, such tumors occur in the retroperitoneal region within the mesentery of the colon.

3. As the capsules of these ovarian tumors *may be infected, no primary closure* of the mesocolon should be attempted.

4. The indication for removal of the ovaries at the normal site depends on the character of the mass removed, on the patient's age and on the presence of additional pathologic conditions of the uterus and ovaries.

ZUSAMMENFASSUNG

Eine Eierstockszyste, die neben zwei normalen in regulärer anatomischer Lage befindlichen Eierstöcken bestand, wurde aus dem Mesokolon entfernt.

Auf Grund der Entwickelung der Eierstöcke aus dem Wolffschen Körper ergibt sich die Möglichkeit, dass solche Geschwülste im retroperitonealen Raum innerhalb des Mesokolons auftreten.

Da die Kapseln dieser Eierstocksgeschwülste infiziert sein können, sollte eine primäre Schliessung des Mesokolons nicht versucht werden.

Die Indikation zur Resektion der in normaler Lage befindlichen Eierstöcke hängt von der Art der entfernten Geschwulst, vom Alter der Patientin und vom Bestehen weiterer krankhafter Veränderungen der Gebärmutter und der Eierstöcke ab.

RIASSUNTO

Venne asportata dal mesocolon *una cisti* ovarica che esisteva in presenza di due ovaie perfettamente normali e normalmente localizzate. Poichè lo sviluppo dell'ovaio avviene dal corpo di Wolff, questi tumori crescono nello spessore del mesocolon.

Una volta asportati, non si deve risuturare il mesocolon, poichè la capsula della cisti può essere infetta.

Quanto all'asportazione contemporanea delle ovaie, essa deve esre giudicata in base ai caratteri della cisti asportata, all'età della paziente e alla presenza di eventuali altre lesioni a carico dell'utero e delle ovaie.

RÉSUMÉ

Rapport sur l'ablation d'un kyste ovarien du mésocolon chez une femme présentant deux ovaires normaux. Conformément au développement des ovaires à partir du corps de Wolff, ces tumeurs se rencontrent dans la région postérieure de l'abdomen à l'intérieur du mésentère du colon.

Les enveloppes de ces tumeurs ovariennes pouvant être infectées, il faut éviter toute tentative de fermeture primaire du mésocolon.

L'indication de l'ablation des ovaires normalement situés dépend du type de la tumeur, de l'âge de la malade et de la présence d'autres symptômes pathologiques du niveau de l'utérus et des ovaires.

RESUMEN

Se presenta el caso de un quiste de ovario (que se extirpa) encontrado en el mesocolon, teniendo la paciente además dos ovarios normales.

Puesto que los ovarios se forman a partir del conducto de Wolf, los tumores de esta naturaleza tienen que ser retroperitoneales, incluídos en el meso del colorn. En estos casos no debe hacerse sutura primitiva del meso tras la extirpación, ya que la cápsula del tumor puede estar infectada.

En cuanto a la indicación de exéresis de los ovarios de localización normal, depende de la naturaleza de la tumoración extirpada, de la exad del paciente y de la presencia de otras anormalidades en el útero o en los ovarios.

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Johann Rudolph Glauber (1604-1688) discovered the salts which bear his name, later identified as sodium sulphate, in the waters of a Hungarian spring. He was the greatest analytical chemist of his time.

—*Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)*

The Uterus and the Products of Inflammation: Fundal Keloid?

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PATIENTS come to the surgeon seeking relief from symptoms. His effort constitutes a vital portion of the practice of medicine. The fascination of medicine lies in the search for the causes of disease and disorder.

There is a set of symptoms, as variable as humanity itself, that confronts the doctor constantly in endless individuality. The complaints cannot be brushed aside, in spite of the fact that gross abnormality may not be detectable. Laboratory tests, "D & C" procedures and other investigations do not supply positive proof of the suspected or diagnosed pathologic condition.

The patients describe many combinations, in many degrees, of such things as abnormal uterine bleeding, pressure in the pelvis, bearing down, intermenstrual spotting or discharge, headache, backache, pain in the pelvis, urgency, malaise, constipation, dyspareunia, "something in the rectum," and so on. Personality change is noted eventually. It may become permanent and destructive to good living, if not treated successfully before too long a time has passed. Correction should be provided while the patient remains young, plastic and resilient.

The "pelvic cripple" is not welcome either at home or in her doctor's office.

Many a patient consults the surgeon only after a long course of hormone shots, vitamins, multiple dilations and curettements, suspensions, appendectomy, ovarian resection, oophorectomy, nerve severances, tranquilizers, shock treatments,

On the basis of a study in which the "standard" hematoxylin-eosin stain and Masson's trichrome stain were compared as to their respective value in revealing the presence, nature and causes of uterine disease, the author reports his conclusion that Masson's trichrome reveals a startling number of highly significant diagnostic points not even suggested by a specimen stained with hematoxylin and eosin. To the fact that the latter stain is used routinely and without question in many hospitals he attributes the frequent neglect of conditions requiring surgical intervention, which in turn, in many cases, accounts for the eventual alteration of a potentially normal woman to a "pelvic cripple." In support of this conclusion he presents color photomicrographs of two immediately adjacent portions of the same specimen, one stained with hematoxylin and eosin and the other with Masson's trichrome, as well as a tabulation of relevant statistical data in 25 cases. He lists his observations specifically and in detail and presents a series of diagnostic and therapeutic recommendations based on the striking contrast of the pathologic picture as revealed by these two stains.

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†Deceased.

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divorce and then more dilations and curettements, in each of which there was a "reassuring biopsy."

There is need for restatement of a fundamental medical fact: "No treatment of disease will be successful unless it corrects the cause."

Examination of the complaining patient will disclose the condition of the uterus, which may or may not be enlarged. There may or may not be detectable swelling of that organ. The position may be low; on the other hand, it may be high and the organ retrofixed by adhesion. The ligaments may be long and loose, but sacroiliac shortening may mask this. Tenderness to movement is surprisingly slight in view of the complaint. Generally, the results of vaginal examination may be called negative by one who is not alert to obscure changes in the myometrium.

Diagnosis rests upon the surgeon's ability to project a true mental picture of myometrial changes. This is the result of what is called "experience." As a corollary and corroboration of this statement the accompanying illustrations record new fact and ancient failure.

The wide range of human behavior and the wider range of responses bring into view certain differences among physicians. Some resist the concept of serious pathologic change in the absence of gross abnormalities; others may be too eager to find it. The margin between the physiologic and pathologic in uterine performance has not been drawn accurately. Today, it follows the patient's personality, her complaint and her physician's acumen.

Abnormal collagen collection, deposit or infiltration is caused by a number of circumstances, all variable and personal to the patient's physiologic state. A "normal" menstrual cycle is an inflammatory experience, "normally" transient. It may be the sole cause of a great deposit of collagen. Another patient may pass through numerous pregnancies and many years with no resulting collagen. Between these two extremes I have observed every variety of pathologic change under the microscope, and a completely variable range of consequent complaint.

The common causes of collagen infiltration through the myometrium are "subinvolution," occupation (nursing, waiting on tables, etc.), endocrine disturbance, traumatic and bacterial sources of pelvic inflammation, tuberculosis, and a way of life that ignores healthful pursuits.

Hospitals have almost universally relied upon the hematoxylin-eosin stain for study of the myometrium. This will identify changes of the nuclei that may indicate carcinoma, but nothing else. Let us see what that stain will *not* do:

> It will give no clue to the age of the patient.
>
> The number of her pregnancies, if any, will remain a complete mystery.
>
> The menstrual history, from amenorrhea to flooding, will not be even suggested.
>
> Increase in the size of the fundus will be reported "not abnormal."
>
> Neither the presence nor the cause of aqueous retention in the myometrium will be noted.
>
> Pain, pressure and dyspareunia will be neither recognized nor explained.
>
> The cause of endometrial thickening will not be recognized. Hematoxylin-eosin staining makes the fruitless "D & C" seem a reasonable form of treatment for the "polypoid endometrium."
>
> The cause of the failure of suspension will not be revealed.
>
> The fact that dilation and curettement aggravates the true pathologic condition will not be explained.

In truth, the hematoxylin-eosin slide for diagnostic study of the myometrium is incompetent, inaccurate, inadequate and irrelevant.

My work in the study of myometrial

collagen originated from the simple fact that the only human response to all insults lies in the field of inflammation. Collagen is the product of inflammatory change. Cutaneous keloid is pure collagen, pathologic, undesirable and difficult to control.

There is no other work on the human myometrium involving the development of collagen and its pathologic consequences. The first question to be answered is, "What is the probable significance of collagen when it is observed among the myometrial fibers?"

Collagen is a connective tissue substance formed through a material secreted in excess, by fibroblasts and reticulum cells, as a response to inflammation and anoxia. The minute fibrils of collagen reach out for surprising distances along normal structures, seemingly having no beginning and no end. As time and influences continue, heavy bundles of collagen are formed and normal structure disappears.

I have compared the microscopic picture with the patient's complaint and found a direct parallel between the trichrome picture of the myometrium and the degree of the patient's disturbance. A well-known method of staining differentially for collagen has been the use of the trichrome stain of Masson. This was applied to sections from uterine fundi; sections that were adjacent in the microtome to those stained with hematoxylin and eosin for "routine diagnosis" in the hospital, the standard, accepted procedure of today.

It must be stated clearly that the collaboration of the physicians at the head of the laboratories, Drs. Mershon, Schmoyer and Thornton-Haymond, has been the most generous and helpful in prosecuting this investigation to its completion. I am a surgeon with an idea; they are the scientists in medicine who did the work and supply the facts. (The photographs came out of my basement.)

The goal before good physicians is the relief of pathologic states. The work of pathologists is an integral part of the job at hand, with the exception of a few who disagree with any change for the better, like the surgeon who never changes!

Unfortunately, tissue committees have taken the laboratory's word as an infallible finality. In recent years some doctors have been willing to denounce others on the basis of "nothing abnormal" reports from tissue sections stained in hematoxylin and eosin. Red Book, March 1958, mentions 600 women who have been saved hysterectomy by virtue of the medical ferrets in accredited hospitals—whose judgments have been prompted by hematoxylin eosin stains! So, this paper becomes all the more important to the pelvic cripple.

In Indiana we have the small county hospital, free of the restrictions attributed to accreditation. Here the state law is well defined. Adequate protection is afforded the public, the hospital and the physician. Public health is guarded by the right to appeal to court protection of all factors involved in the care and treatment of the sick.

The patients from whom our studies are made have undergone operations properly, successfully and legally performed. These pelvic cripples have been brought back to good health and to re-entry into good family life, before the passage of time in disease and character change made that impossible.

Our work is continuing in the fields that should be obvious.

The Hematoxylin-Eosin Stain (Fig. 1). —This photomicrograph is assumed to show normal myometrium. In Indianapolis, pathologists and tissue committees, basing all decisions upon this type of slide, deny surgical relief through hysterectomy to the disturbed patient. Auditors understand none of the situation and promise loss of accreditation if "unjustified hysterectomy" is done.

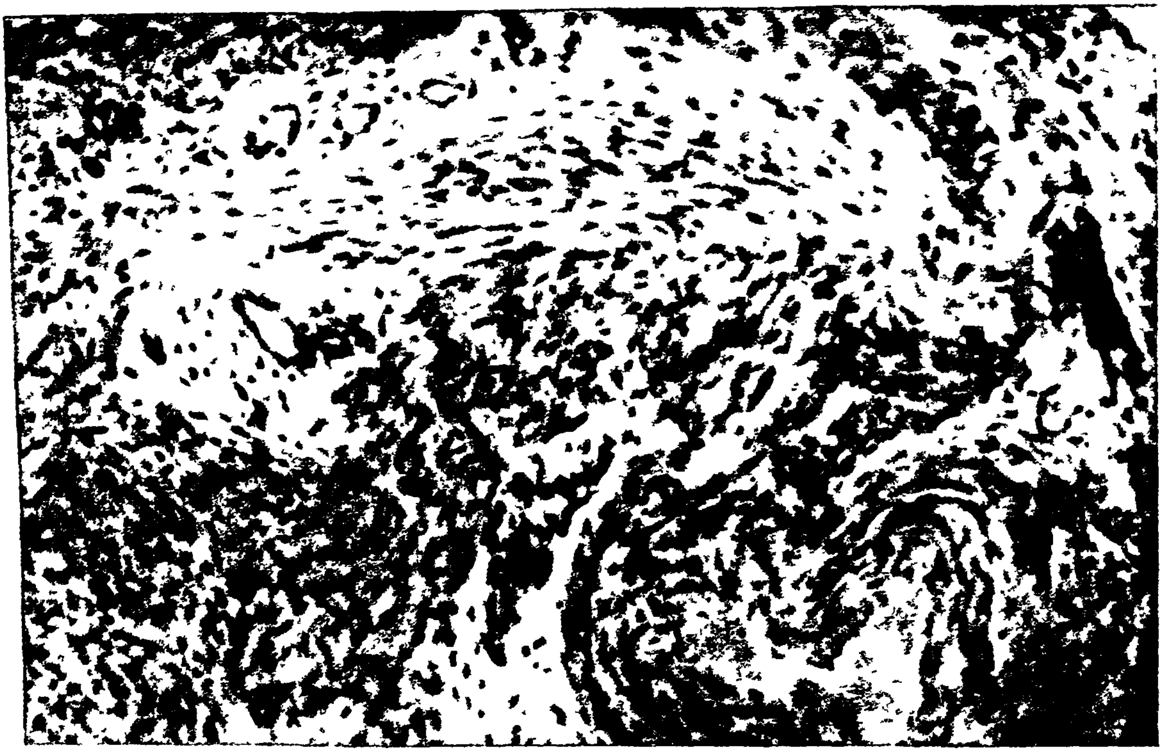

Fig. 1.—Specimen stained with hematoxylin and eosin.

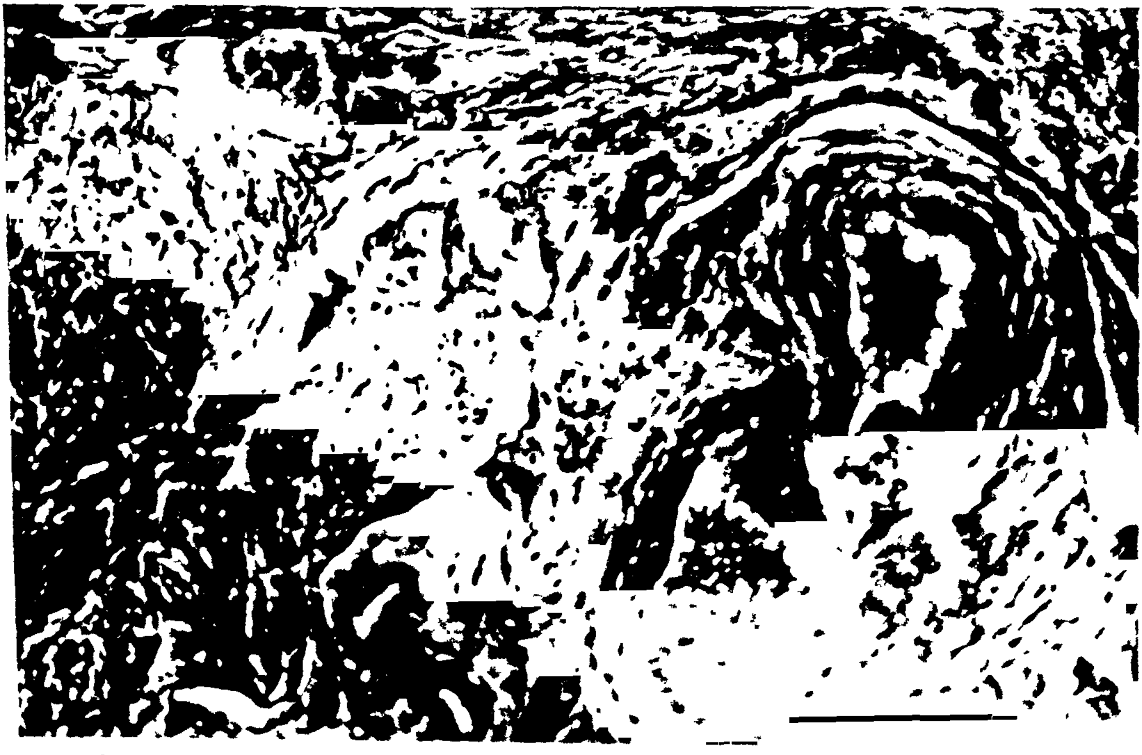

Fig. 2.—Adjoining section of same specimen stained by [illegible]

Data on 25 Cases

Case	Age of Patient	Para	Size of Uterus, Cm. Life	Lab	MP*	Discharge	Symptoms	Collagen, %	Recovery**
1	24	3	17	10	++	Clear	Pain; prolapse, weight; dyspareunia	75	Complete
2	22	0	7	5+	—	++	Visible ovarian cysts	50	Complete
3	28	2	7½	4½	++	+	Procidentia; cystocele	20–50	Complete
4	22	0	8	5+	—	Clear	GC PID in youth; bilateral salpingectomy	25	Complete
5	37	2	11½	8	+++	Constant	Trichomonas; pain; backache; prolapse	75	Complete
6	39	2	8	5+	+	Minor	Procidentia; cystocele; subinvolution	10	Complete
7	35	0	9	6	0	Watery	Bilateral oophorectomy in youth; pain; dyspareunia	50	Unstable
8	37	4	12	8	++	Cloudy	Fibrotic, low-lying, edematous uterus	40	Complete
9	30	3	8	6	+	Constant	Lacerations, procidentia, complaints	20	Complete
10	38	6	12	8½	++	++	Pain, everted cervix; "nerves"; loss of weight	25	Complete
11	37	3	12½	8	+	+	Backache, headache; loss of work time	50	Complete
12	36	4	15	9	+++	++	Procidentia, cystocele, precarcinomatous cervix		Complete 15–50
13	34	0	8	6	++	++	PID at 20; trichomonas; periodic pain	50	Complete
14	40	2	9	6½	+++	+++	Endometriosis; mental exaggeration; pain	60	Gain of 20 pounds; bad mental state
15	42	3	8	6	+++	+	Continuous pelvic pain; complaints	15	Complete
16	41	2	6 cervix		+	+	Large precarcinomatous cervix, hard fibrotic uterus	80	Complete
17	45	2	10	6½	++	++	Many operations; no relief	30	Complete
18	45	2	10	6	+++	+++	Dyspareunia; backache; pain; tenderness	90	Complete
19	65	8	8	7	0	0	Complete procidentia; cystocele	5	Complete
20	31	0	8	7	++	++	Pain; dyspareunia; pelvic pressure	20	Complete
21	27	3	8	6½	+	0	Complete prolapse and dyspareunia	35–40	Complete
22	55	0	6	5+	0	++	Healed tbc, hysterectomy + total plication	50	Complete
23	41	2	7½	5+	+	± Brown	2 cesareans; small fibroids	40	Complete
24	37	6	(Cervix filled introitus)				Pain; pressure; backache; dyspareunia	20	Complete
25	41	1	9	7	+++	+++	Transfusion needed; home disputes	25	[illegible]

*P+ means heavy menses; ++ means flooding; +++ means that blood replacement is required.
**Recovery listed according to patient's description of relief gained from former complaints.

The whole undesirable situation hangs upon the willingness of some men to use irrelevant laboratory procedures to damage their colleagues and so degrade better medicine and surgery. And in the present scheme of organization, no mechanism is available to a good surgeon for appeal against improper dictation.

Masson's Trichrome Stain for Collagen in the Myometrium (Fig. 2).—The two illustrations accompanying this article are from successive microtome sections of the same uterus. Collagen stains blue or green, according to the dye used and the method of color reproduction. With the hematoxylin and eosin stain, all connective tissue stains alike. There can be no differentiation.

With Masson's trichrome, the green collagen is seen filling all tissue spaces and surrounding blood vessels. Under high power it can be seen to be invading the vessel wall and the muscle fiber inside the muscle bundle of the myometrium.

The patient in the case illustrated was 21 years old. Hysterectomy was delayed until after fourteen transfusions and five "D & C's." Three years had passed since the birth of her first child; divorce had broken up the family; the child had been placed in a "home," and the mother had been thrown out of her room for default of payment. She was dripping pink fluid and had only 1,200,000 red cells per cubic millimeter of blood. I hope this is possible only in Indianapolis.

Compare the trichrome picture with the hematoxylin-eosin "standard." The surrounding of blood vessels and the plugging of tissue spaces explain the major symptoms of continuing blood loss, heaviness, backache, pressure pain, aggravated dyspareunia, interval discharge, and the fact that the uterus was filled with edema that came out as soon as the surface was cut. None of these are indicated with hematoxylin and eosin; all are clearly visible under trichrome.

I have "run through" many such patients since 1953, when a sort of denial of good science came our way. One hundred were studied after companion microscope slides had been made, to facilitate statistical analysis. It was noted that the endometrial thickening runs parallel to the amount of collagen present along vascular channels. The work of Joseph Leighton, Ira Kline and Henry C. Orr opens up the possibility that the lessened oxygen tension from collagen infiltration may have a bearing on human disorder. If endometrial cells in the test tube turn mitotic when oxygen is lessened, it may be discovered that collagen in the human myometrium, if allowed to remain there too long, exerts an influence toward endometrial malignant disease.

In this series, and in the accompanying table, the label "Nothing abnormal in this fundus" was attached to every case by the routine standard hospital laboratory using the hematoxylin-eosin stain on the slide adjacent to the one I studied under Masson's trichrome.

The illustrations provide a fair and average comparison between the appearance of the hematoxylin-eosin slides and that at the twin trichrome slides. This throws into sharp focus the need for better-directed laboratory analysis if claims to diagnosis are to be supported. Again, the routine accepted standard of hematoxylin-eosin preparation for myometrial diagnosis is irrelevant, inadequate, inaccurate and incompetent.

These trichrome studies offer a new picture of a long-troubling disorder. One can explain the fibrotic uterus, the subinvoluted uterus, the fibrous uterus, and the diffusely fibroid uterus; one can also explain "chronic pelvic inflammatory disease" and other conditions even more vaguely named, by the various degrees to which collagen has infiltrated the myometrium.

The table of 25 case histories here presented is a brief and condensed list from the group labeled "nothing abnormal" from the hematoxylin-eosin slide, but in which complaints properly described a "pelvic cripple," operated and proved valid by trichrome.

This identification of collagen infiltration into the myometrium and the obvious turn of physiologic into physiopathologic conditions is the accurate, adequate, competent and relevant laboratory proof of the disease that makes a woman a "pelvic cripple." The need for corrective therapy is shown both by the patient's complaint and by the microscopic picture.

The treatment is hysterectomy.

A Series of Observations, Constantly Repeated, Justifies the Establishment of Rules:

1. The presence of collagen will increase the size of the uterus or will replace the normal myometrium, perhaps without change of shape.
2. After removal, measurements of the collagenous uterus will decrease 40 per cent.
3. Collagen causes passive congestion and edema of the uterus.
4. Endometrial thickening follows, and is significant.
5. Abnormal bleeding parallels the presence of collagen along vascular channels and tissue spaces.
6. The relation of endometrial anoxia to malignant change needs concern in the timetable of therapy.
7. The increased weight of the collagenous uterus and the softening of its supports lead to its descent in the pelvis.
8. The presence of collagen is not reduced by hormone therapy, suspension or dilation and curettement.
9. The lines of blue and green in the illustration represent the photographed cause of the symptoms observed in the "pelvic cripple." This is the first proof of the pathologic nature of the disorders and of the need for surgical intervention.
10. Age has no relation to the cause or progress of this disease.
11. This disorder due to collagen is self-perpetuating. As little as 10 per cent collagen in the myometrium has caused distress. I have not encountered these symptoms in a patient free of collagen. I have observed collagen-free uteri at all ages during the course of other work.
12. Hysterectomy alone is curative. The time is elective.

SUMMARY

A series of observations, made repeatedly, becomes a series of rules.

1. The average shrinkage of the collagenous uterus is 40 per cent immediately upon removal and before it reaches the laboratory. This estimate comes from uteri measured by rule *in vivo* and compared with the laboratory measurement later.

2. The amount of collagen estimated by observance of the trichrome stained slide is in direct ratio to the increase in size of the uterus before excision.

3. In life, deposit of collagen in the uterus is manifested by gross edema of the specimen and its passive congestion.

4. Endometrial thickening is present and is significant.

5. The relation of connective tissue anoxia to malignant change must be kept in mind in the time schedule of surgical intervention.

6. Excessive bleeding accompanies blocking of tissue spaces by collagen fibrils.

7. The added weight of the pathologic uterus infiltrated by collagen softens the supporting ligaments. Suspension does not help in the least.

8. No repositioning of the uterus or other medication will change the cause of this pathologic condition.

9. The cause of pain, tenderness, pressure, fullness, weight on the rectum, dyspareunia, excess bleeding, intermenstrual spotting and the moisture that defeats treatment of trichomonas are seen in the lines of blue and green. They are the fibrils of abnormal and disease-producing collagen.

10. Age has no relevancy to the cause or the progress of this condition.

11. The pathologic process is self-perpetuating and progressive.

12. Hysterectomy alone is curative. The time is elective.

As is typical of all human pathologic states there has been difficulty in finding exact parallel between the pathologic picture and the complaint. As little as 10 per cent collagen has caused unceasing complaint in some patients. How quickly it increases is yet to be determined. This seems to be a field for new and added observation that should attract minds interested in research.

For their unstinted assistance in the many steps of the work done in this series, I wish to express deepest gratitude to Carl Ferguson and C. G. Gilbart, U.S. Naval Avionics Spectrographic Laboratory; J. B. Mershon, M.D., Mershon Medical Laboratory; M. Ray Schmoyer, M.D., Community Hospital Laboratory, and J. L. Haymond, M.D., Thornton-Haymond Medical Laboratory.

ZUSAMMENFASSUNG

Aus einer Reihe von wiederholten Beobachtungen wird eine Reihe von Gesetzen.

Die durchschnittliche Schrumpfung der kollagenen Gebärmutter im Zeitraum zwischen der Resektion und ihrer Ankunft im Laboratorium bertägt 40%. Diese Schätzung stammt von Messungen, die an der lebenden Patientin vorgenommen und mit späteren Messungen im Laboratorium verglichen wurden.

Die durch Beobachtung der dreifarbig gefärbten Schnitte abgeschätzte Kollagenmenge steht in direkten Verhältnis zur Zunahme der Grösse der Gebärmutter vor der Resektion.

Eine Verdickung der Gebärmutterschleimhaut besteht und ist bezeichnend

Die durch Beobachtung der dreifarbig Bindegewebes zu bösartigen Veränderungen muss bei der Festsetzung des Zeitpunktes des chirurgischen Eingriffs berücksichtigt werden.

Weder die Rückverlagerung der Gebärmutter noch andere medizinische Massnahmen haben einen Einfluss auf die Ursache dieser krankhaften Veränderung.

Nur die Gebärmutterresektion führt zur Heilung. Der Zeitpunkt der Operation muss nach den Umständen des Einzelfalls gewählt werden.

Wie bei allen Erkrankungen des Menschen ist es auch hier schwer, eine genaue Parallele zwischen dem pathologischen Bild und den Beschwerden zu ziehen. Bei manchen Patientinnen führen so geringe Mengen wie 10% Kollagen zu endlosen Beschwerden. Wie schnell das Kollagen ansteigt, ist noch unbestimmt. Für die, die an Forschungsarbeit interessiert sind, scheint hier ein Feld für neue Beobachtungen vorzuliegen.

RÉSUMÉ

Des séries d'observations renouvelées donnent lieu à des séries de règles.

Le rétrécissement moyen de l'utérus collagène est de 40% immédiatement après l'extirpation et avant d'arriver au laboratoire. Cette estimation résulte de mensurations systématiques en série in vivo, comparées ensuite à celles faites au laboratoire.

La quantité de collagène estimée d'après l'étude de lames colorées trichromes est en proportion directe avec l'augmentation de volume de l'utérus avant l'excision.

Il y a un épaississement significatif de l'endomètre.

Il faut tenir compte du rapport possible d'une anoxie du tissu conjonctif avec

une modification maligne au moment de fixer le plan opératoire.

Ni la réposition de l'utérus ni aucune autre thérapeutique ne modifieront la cause de cet état pathologique.

Seule l'hystérectomie amène la guérison.

Il a été difficile de trouver un parallèle exact entre le tableau pathologique et les plaintes du malades, ce qui est d'ailleurs caractéristique de tous les états pathologiques. Une dose pourtant très faible de 10% de collagène a suffi pour provoquer des troubles constants chez quelques malades. La rapidité de son augmentation reste encore à déterminer, et c'est là un champ de recherches digne d'intérêt.

RESUMEN

Una series de observaciones, si repetidas, conducen a una serie de reglas.

Por término medio el útero colageno experimenta una retracción de un 40% inmediatamente después de la extirpación y antes de llegar al laboratorio. A esta conclusión se llega en consecuencia de mediciones hechas in vivo y en el laboratorio.

In vivo el depósito de colágeno en el útero se manifiesta por edema y congestión pasiva.

En estos casos es de significación el engrosamiento del endometrio.

Al tiempo de la intervención debe tenerse en cuenta la relación entre la relación entre la anoxia del conjuntivo y la degeneración maligna.

Ninguna operación de refuerzo de los sigamentes u otro tratamiento es capez de cambiar la naturaleza de la enfermedad.

Solo la histerectomia cura la enfermedad siendo electivo el tiempo de llevarla a cabo.

Como es tipo en todos los estados patológicos humanos es difícil encontrar un paralelismo entre el cuadro patológico y la sintomatología. Tan solo un 10% de colágeno es capaz de producir molestias incesantes en algunas enfermas. Es difícil determinar cuan rápidamente progresa el padecimiento.

Resulta pues tratarse de un campo dispuesto para nuevas observaciones que debe atraer a las mentes dispuestas a la investigación.

RIASSUNTO

Il volume dell'utero si riduce in media del 40% dopo la sua asportazione. Questi valori sono stati calcolati misurando l'utero in vivo e poi paragonando le misure con quelle ottenute successivamente in laboratorio.

La quantità di collageno presente nell'utero, e valutata sui preparati colorati con i metodi tricromici, è direttamente proporzionale all'aumento di dimensioni dell'utero prima della sua asportazione.

L'ispessimento dell'endometrio è significativo.

Bisogna tener presenti i rapporti fra l'anossia del tessuto connettivo e le trasformazioni maligne.

Nessun metodo di pessi nè alcun medicamento può giovare in questa condizione.

Solo l'isterectomia riesce efficace.

Come in tutte le altre malattie, è difficile trovare una relazione fra i disturbi e il quadro patologico. In certi casi i disturbi provengono da quantità di collageno del 10%. Non è possibile stabilire la sua velocità di crescita. Si tratta di un campo ancora aperto allo studio.

The Taranto Operation in Correction of Genital Prolapse

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BUENOS AIRES, ARGENTINA

The author analyzes the results of treatment in 41 cases of genital prolapse operated on by the Taranto technic, known as "integral treatment of the fascia and formation of a flap for the bladder." The main steps of this operation are briefly described with emphasis on several points essential to its success.

The conclusions drawn are that the procedure offers certain advantages as to anatomic restoration throughout the vaginal conduit, with a remarkably good intrapelvic elevation of its organs, and that the functional result is also good, incontinence being successfully corrected in a high percentage of cases.

ACCORDING to Piero Cattaneo's conclusions published in "Minerva Ginecologica" under the title "Il Metodo di Taranto per la cure operative del Prolasso Genitale" (The Taranto Method for the Operative Cure of Genital Prolapse), the valuable observations of Raoul Palmer, as he himself has described them in "Assises Francaises the Gynecologie," and also those of other colleagues who have done research on the aforementioned procedure, I intend here to explain my own experience and the details of its technic, emphasizing some points in its better performance. Cattaneo stated: "The operative technic proposed by Taranto deserves to be widely known and considered, because, although many methods have been fully described, none of them respects so well the topography of the zone and the function of the organs and offers such a solid and perfect reconstruction of all the affected elements in the development of genital prolapse. Palmer, in his work entitled "Le traitement des prolapsus genitaux" (The Treatment of Genital Prolapse) expressed entire agreement both with the basic points and with the very details which Taranto calls "Integral Treatment of the Fascias with the Formation of a Flap for the Bladder." Taranto expressed the opinion that the pelvis should be repaired in all its parts, basing his theory on the idea that the pelvic conjunctive tissue is the essential element in the scaffolding of the pelvic structures.

Up to the time of writing, statistics from Pirovano Hospital are as follows: During seven years, 41 patients with prolapse have been operated on, their ages ranging from 20 to 69.

In 23 cases the prolapse was of Grades 1 and 2; in 18 cases, Grade 3. Incontinence was noted in 8 cases.

Amputation of the uterine cervix has been done in 17 cases, in 50 per cent of which a histopathologic examination had been done earlier.

The patients were regularly followed up, and the results were highly satisfactory except when a relapse occurred after a completed pregnancy or when the incon-

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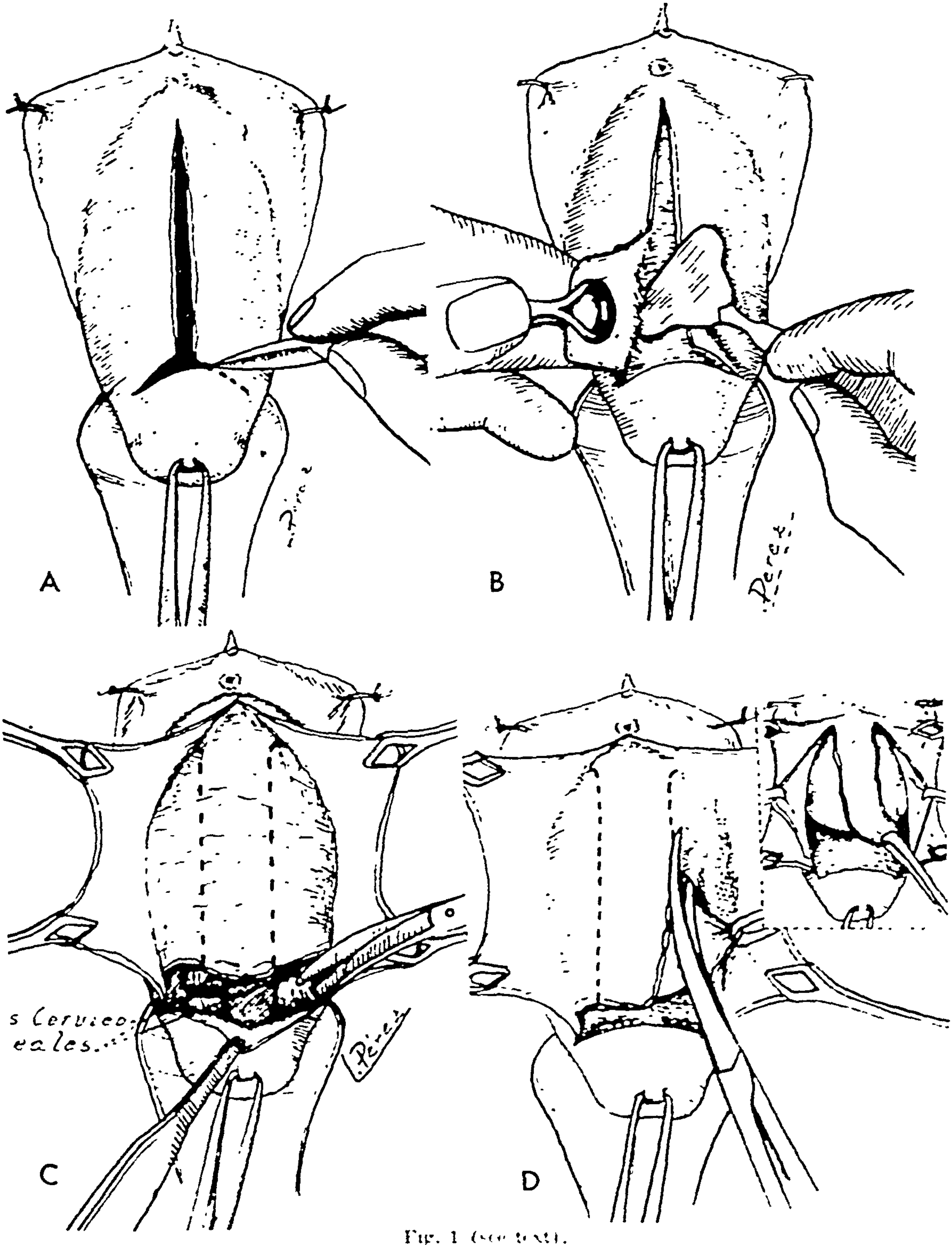


Fig. 1 (see text).

tinence was not completely corrected.

The postoperative complications have included only 1 case of suppurating hematoma, which probably caused unfastening of the vesical flap and consequently the persistence of a cystocele. Neither [illegible]

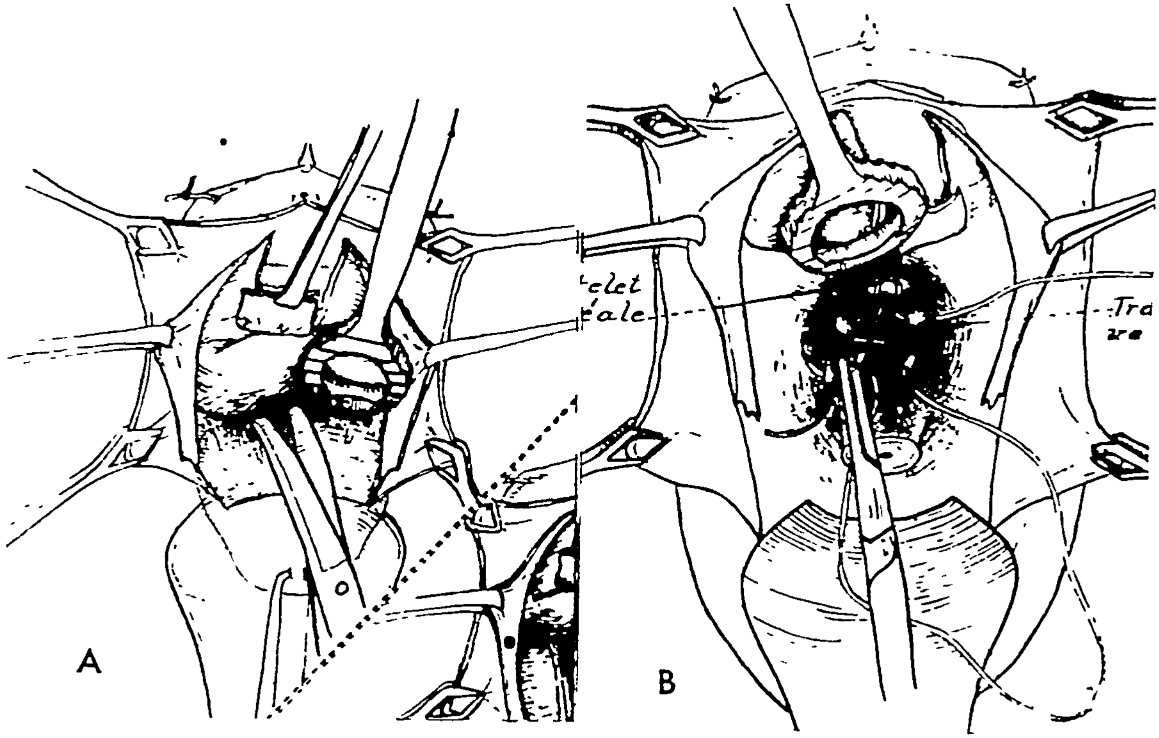


Fig. 2 (see text).

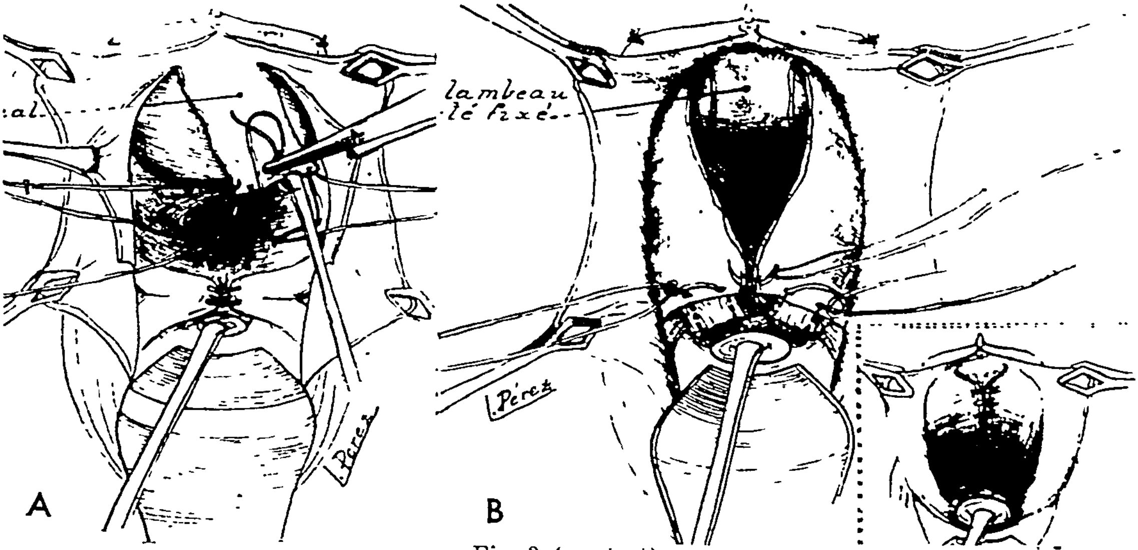


Fig. 3 (see text).

complications nor deaths have been reported up to time of writing.

This procedure, based on the pathogenic principles aforedescribed, places predominant value on the integrity of the endopelvic fascia in all its parts (ligaments, septum and prolongations) and on integrity and solidity throughout both vaginal columns. It represents an effort to reinstate these elements completely. The different steps of the operation may be outlined as follows:

Anterior Colpography and its Complements.—1. *Incision of the anterior vaginal mucosa* in the form of an inverted Y, with its shortest branches curved around the uterine cervix, starting 0.5 cm. from the meatus (Fig. 1*A*).

2. *Dissection of the mucosa* (a true revival for which the spatula is used): tacking of the labia with Gregoir forceps (Fig. 1*B*).

3. *Formation of the flap of vesicovaginal septum,* which is subdivided as follows:

a. The cervical extremity of the septum is sectioned to the level of its insertion in the uterine neck.

b. The cervicovesical pillars are sectioned (Fig. 1*C*).

c. A lengthwise section is done of a side of the septum, previously separated from the bladder only in the zone of the lateral flap (Fig. 1*D*).

e. The flaps are marked with Allis forceps. The central one, after marking, is attached to the cervix by its free end (Fig. 4).

4. *The vesicouterine space and neighboring elements are repaired.* This involves amputation of the cervix uteri when necessary; correction of the retroversion; shortening of the Mackenrodt ligaments, and, finally, fixing on that space of the flap worked out from the vesicouterine septum. All this must be done in the following order of procedure:

a. Dissection with scissors, principally in the aforementioned space, until the peritoneal plica can be seen (Fig. 2*A*).

b. Narrowing the space of its network (a real darning or corrugation, with cross-stitches in fours and eights) (Fig. 2*B*).

c. Correction of the retroversion with a stitch holding the anterior aspect of the uterus (adjacent to the plica) on one side and the posterior face of the bladder on the other.

d. Shortening of the Mackenrodt ligaments, which are then fixed with one or two stitches to the cervix (Fig. 3*A*).

e. Fixation of the flap by its free end (Fig. 3*A*), with the long extremities of the threads that corrugate the vesicouterine space (*b*) and those for correction of the recently mentioned elements at points *c* and *d*.

5. *Joining of the lateral flaps of the septum to the cervix,* among themselves and by their cervical ends, without neglecting the cervicofascial pillars (Fig. 3*B*).

6. *Synthesis of the anterior vaginal mucosa,* with previous elimination of the surplus, which is done economically by employing Donatti stitches (Fig. 4*A*, *I* and *III*).

7. *Reconstruction of the uterine neck.* cervix, with the neighboring extremity of the mucosa (this step may precede step 6) by means of Stundorff stitches (Fig. 4*A*, II).

I now pass to *posterior colpoperioneorrhaphy,* retaining the sequence of enumeration.

8. *Section with bistoury and transfixion of the mucosa in the fourchette* (Fig. 4*B*, *I*).

9. Separation with the bistoury first (Fig. 4*B*, *II*), and continuation with the spatula, of the back wall of the vagina to the uterosacral ligaments (Fig. 4*B*, *III*).

10. *Shortening of the uterosacral ligaments and their fixation to the posterior face of the cervix,* which can be reached from this point (Fig. 5, *I*).

11. *Reparation of the uterovaginal septum* with stitches in cross form in its damaged network (Fig. 5, *II*).

12. *Myorraphy of the levator muscles* (Fig. 5, *III*).

13. *Reconstruction of the perineum,* without losing sight of the fascial lamina (Fig. 6, *I*).

14. *Fixation of the lower or perineal end of the septum to the perineum,* already

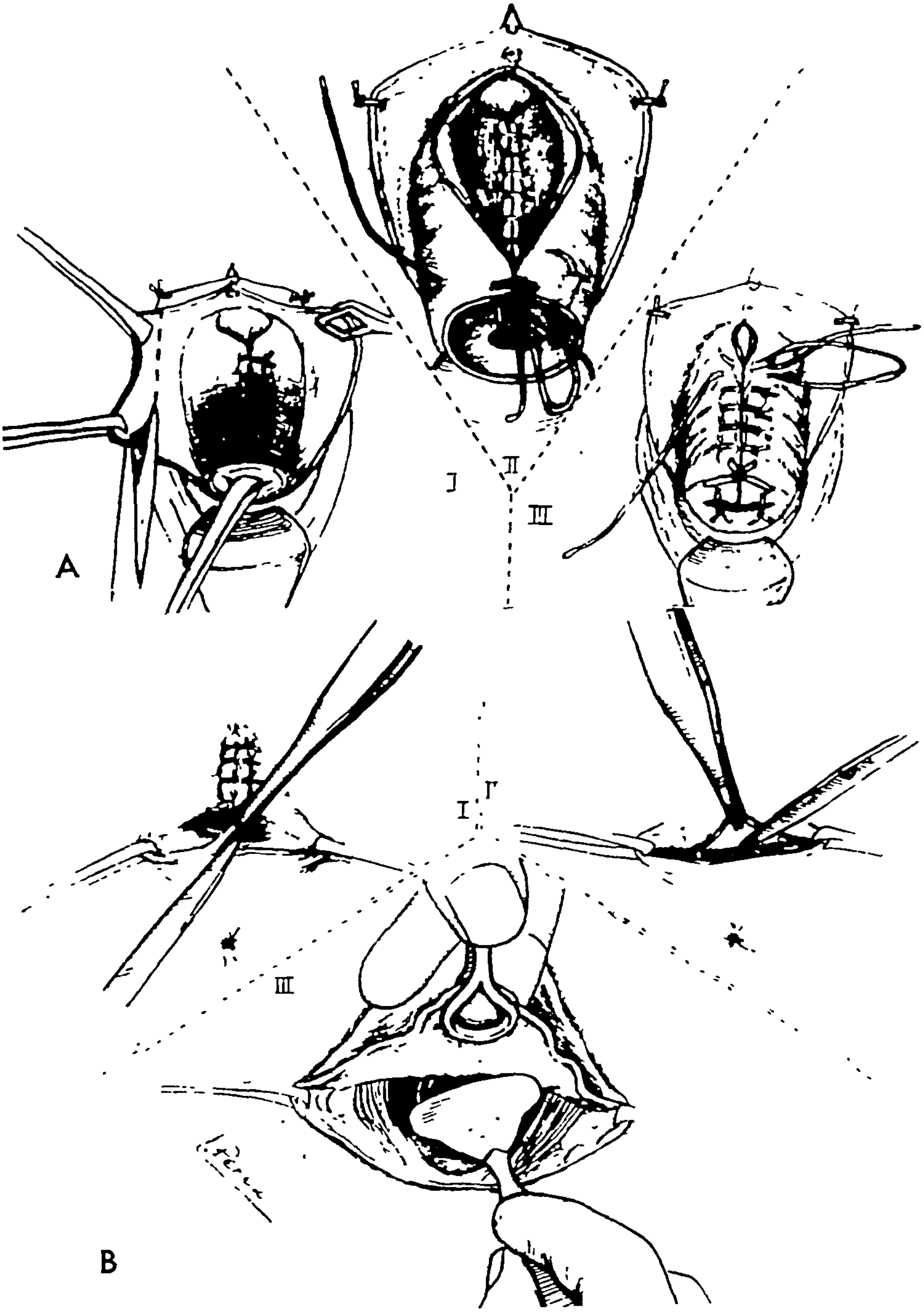


Fig. 4 (see text).

restored to its limit with the skin (Fig. 6, *II*).

15. *Placing of the Pezzer tube* (Fig. 6, *III*).

With this summary of the technic, one should remember some important details:

1. The flap to be made should have all the height of the vesicovaginal septum, but

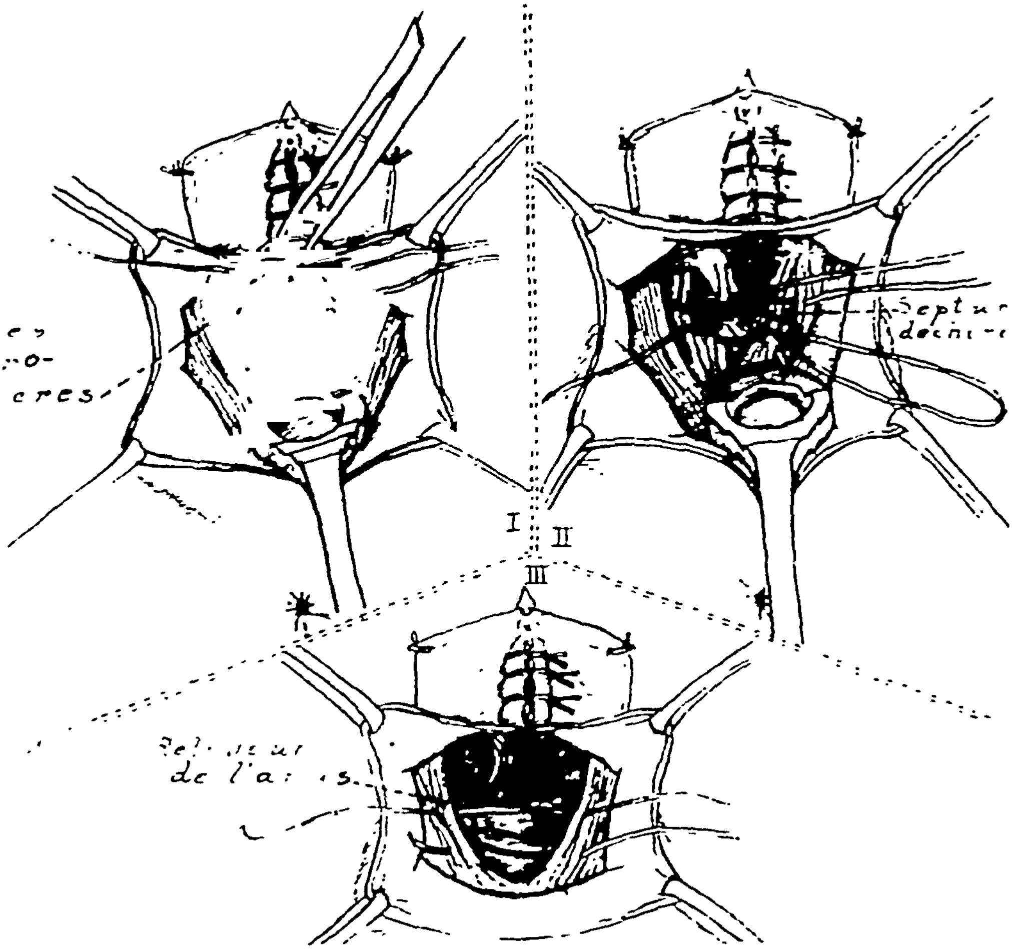


Fig. 5 (see text).

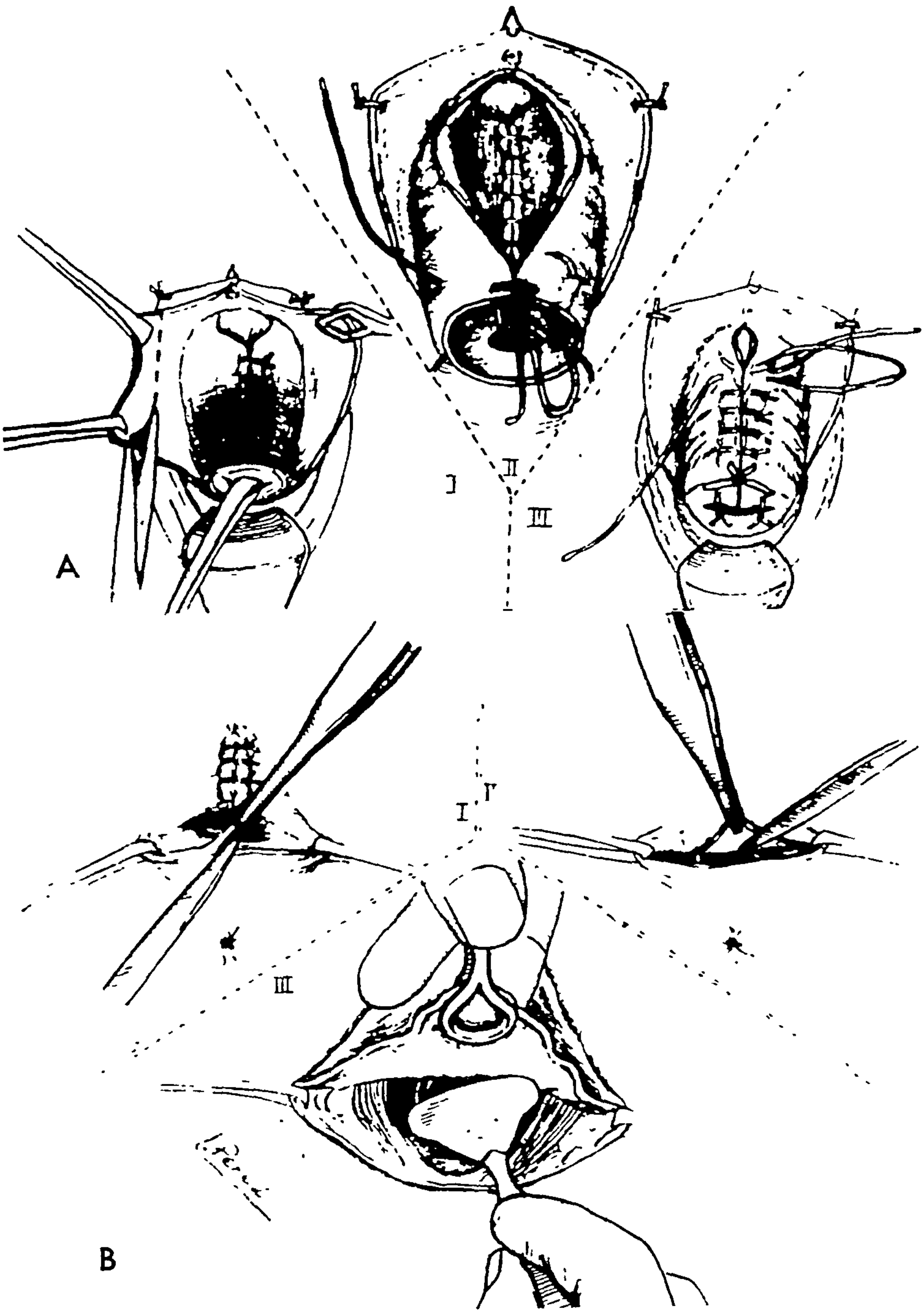
its width depends on the degree of the prolapse, i.e., the bigger, the wider; so that the union of the lateral fascial flap, when plicated, will not be too loose. At the same time, if the prolapse is small, the flap should be narrowed, because otherwise its lack of tissue would prevent the synthesis of the laterals.

2. Cutting near the meatus (less than 1 cm. away) enables one to go through a solid basement area and involves a diminished surgical risk to the urethra.

3. It is necessary to fix the free extremity (cervical) quite high in the vesicouterine space, near the peritoneal plica, which will elevate the bladder and restore it to its proper place, so that the newly formed band may remove and lengthen the urethra in its distal section.

4. If any laceration should be noted in the septum, it should be repaired before fixation.

5. Finally, in order to obtain an efficient fascial septum of maximal thickness and with bloodless undermining, the separation of the mucosa should be done as finely as possible, so that the result will be an onion-skin effect. For this one should be well prepared, because the instrument can easily slip toward a deeper layer, which obliges one to rectify conditions constantly. If any hemorrhage is noted, it



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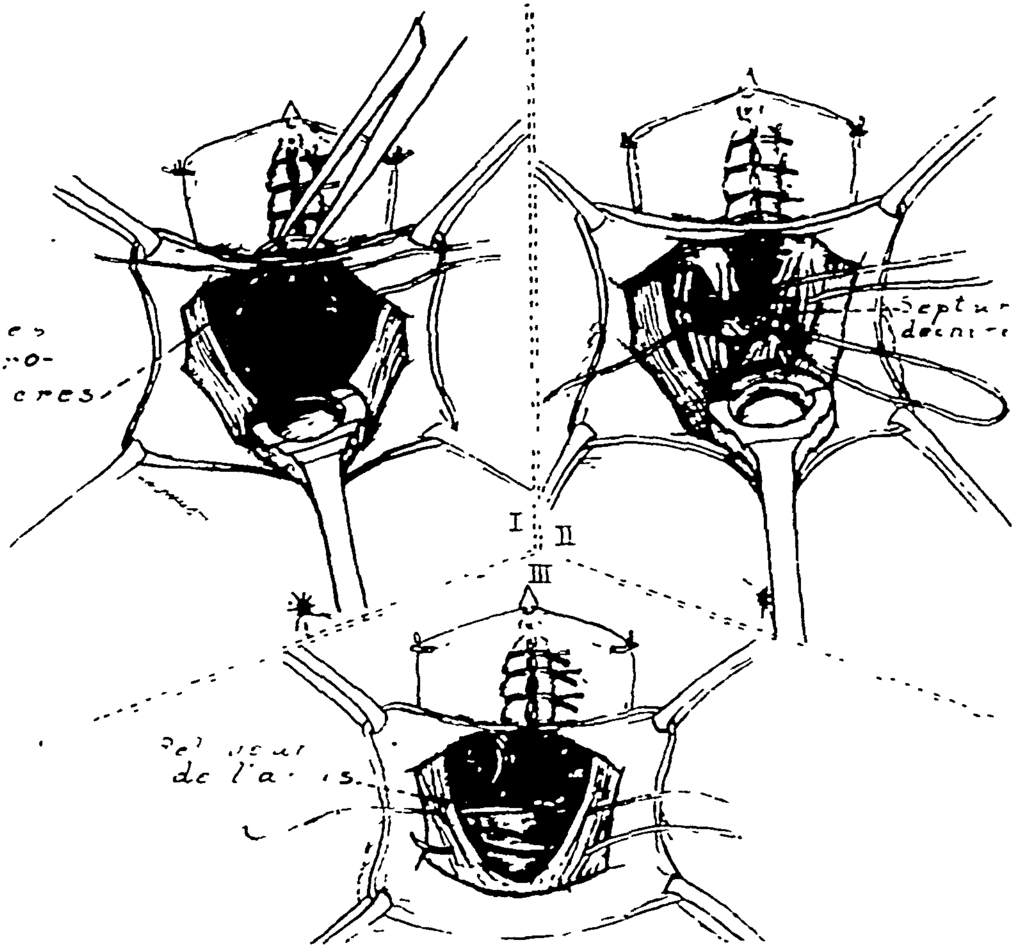

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Germany has often claimed that it was she who discovered Shakespeare and introduced him to the English. She may claim with greater right that she discovered Lister and introduced him to the London surgeons. In the interesting train of events which then followed, Richard von Volkmann, the great German surgeon. was a dominating figure. Volkmann was more than a surgeon. he was an artist and a poet, and every schoolboy who studies German has read some of the delightful poems of "Richard Leander." Volkmann had just returned from the Franco-Prussian War to his hospital in Halle, filled to overflowing with wounded soldiers. most of them terribly infected. Infections and erysipelas carried off most of the patients after operation. Volkmann decided to give Lister's treatment a trial. The result was magical. and Volkmann's conversion was sudden and permanent. He could write not only poetry. but clear. pungent prose. He liked a good fight and immediately leaped into the fray. His influence was immense, so in a short time every German surgeon of note was a champion of Lister's methods. Professor Nussbaum. the distinguished surgeon of Munich, declared in a public lecture that any surgeon ignoring antiseptics should be called to account if he lost a patient from infection; and Volkmann attacked all doubters and critics vigorously and. if the truth be stated. rather brutally at times.

—*Major*

Neurologic Surgery

Diseases of the Cervical Portion of the Spine

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Full utilization of diagnostic roentgen data can be secured only on the basis of fundamental embryologic, physiologic, neurologic, anatomic and pathologic knowledge of the region involved. The author presents an anatomic review of known facts concerning the cervical portion of the spine, with the necessary neuroanatomic details, including the distribution of the cervical, sympathetic and cranial autonomic nerves. The Sherrington formula is cited to explain certain nerve patterns. The probable pathogenesis of post-traumatic headache is considered, and the importance of complete and properly performed roentgen studies of the cervical portion of the spine is particularly stressed, with an explanation of the technic.

THE multiplicity and complexity of the problems and, at times, the bizarre symptoms[1] associated with diseases of the cervical portion of the spine demand a synthesis and application of the available knowledge in many fields of medicine, encompassing human life from its embryonic state to old age.

The clinical radiologist occupies a unique practical position, since he is consulted with and informed by his colleagues and his specialty permits him to study, explore and detect pathologic conditions in the living. The roentgenogram is a negative in which shadings reflect the differential absorption and transmission of roentgen ray energy through tissues. The better a film is *technically*, the more value it possesses. The roentgenogram can be used to detect functional as well as structural alterations.

Anatomically, the cervical region extends from the jaw, the mastoids and the back of the head to the two clavicles, with the notch between them and the scapulae below. It contains numerous structures, and, because of its interesting development, structures quite distant to it remain related to it in diverse fashions; e.g., the diaphragm, with its nerve supply principally from the fourth cervical segment, that has receded into the chest with the pericardium and the trapezius muscle, the innervation of which may be partially accounted for by its embryonic development. The trapezius is a muscle of the ventrolateral group that migrates dorsally and becomes attached to the vertebral column. The sternohyoid and geniohyoid are muscles of this group that have not migrated. Errors of development are responsible for congenital deformities, which are usually multiple and may involve several segments.

Submitted for publication Nov. [illegible]

In children, the neck is relatively short; its full length is reached only in adult life by full and complete development of the vertebrae.

The motions of the neck that are executed at the spine through coordinated neuromuscular activity can be summarized as follows:

a. Nodding, forward and backward; this movement takes place at the occipitoatlantal joints.
b. Rotation, which takes place at the atlas-axis articulation and throughout the cervical portion of the spine.
c. Lateral flexion or bending, which occurs in the midsegments of the cervical portion of the spine.
d. Flexion and extension, which take place mostly in the lower segments of the cervical portion of the spine. (Hyperextension injuries frequently involve the bones and joints at the fourth and fifth cervical levels, while hyperflexion injuries favor the fifth and sixth.)

Full, complete and properly made roentgen studies of the cervical portion of the spine can determine the presence or absence of (a) fractures, (b) dislocations or subluxations, (c) anomalies, (d) infection, (e) degeneration, (f) necrosis, (g) tumor formation, (h) alterations in position and curvature, (i) the status of the paired and unpaired joints, (j) the status of the intervertebral foramens, (k) soft tissue involvement and (l) bone mineralization and texture.

The vertebral column[2] is a sinuous and flexible column formed by a series of bones called vertebrae. The smallest of the true vertebrae are the cervical, which normally total 7, and the principal difference between them and the other vertebrae is that their transverse processes contain apertures or foramens which, in the upper six parts, give passage to the vertebral arteries and veins and a plexus of sympathetic nerves.

A typical cervical vertebra consists of two essential parts, an anterior segment, or *body*, and a posterior segment, or *arch*.

There is a marked difference in the composition of the bone that forms the body and that which forms the arch. The former is cancellous bone, the latter compact bone.

The posterior segment[2] is made up of a pair of pedicles and a pair of laminae that form an arch about the vertebral canal and support seven processes, viz., four articular (two superior and two inferior), two transverse and one spinous. The cervical vertebrae include two atypical pieces, the atlas, or first cervical, and the axis, or second cervical, mentioned by Piersol, the anatomist, as peculiar.

The joints concerned in the articulation of each cervical vertebra consist of the paired apophyseal, both superior and inferior, formed by the articular processes, whose planes are practically horizontal; the uncovertebral joints between the posterolateral aspects of the adjacent bodies, and the intervertebral fibrocartilaginous joints that occupy the intervertebral or body spaces.

In the cervical portion of the spine, slight movement, combined with great strength, is present at the fibrocartilaginous joints, while in the *freely movable* joints, such as the apophyseal, the surfaces are completely separated: the bones forming these articulations are expanded (for greater convenience of mutual connection), covered by cartilage and enveloped by capsules of fibrous tissue. The cells lining the interior of the fibrous capsule around the joints form an imperfect membrane, the synovia, which secretes a lubricating fluid. In addition, the joints are strengthened by strong fibrous bands called ligaments, which extend between

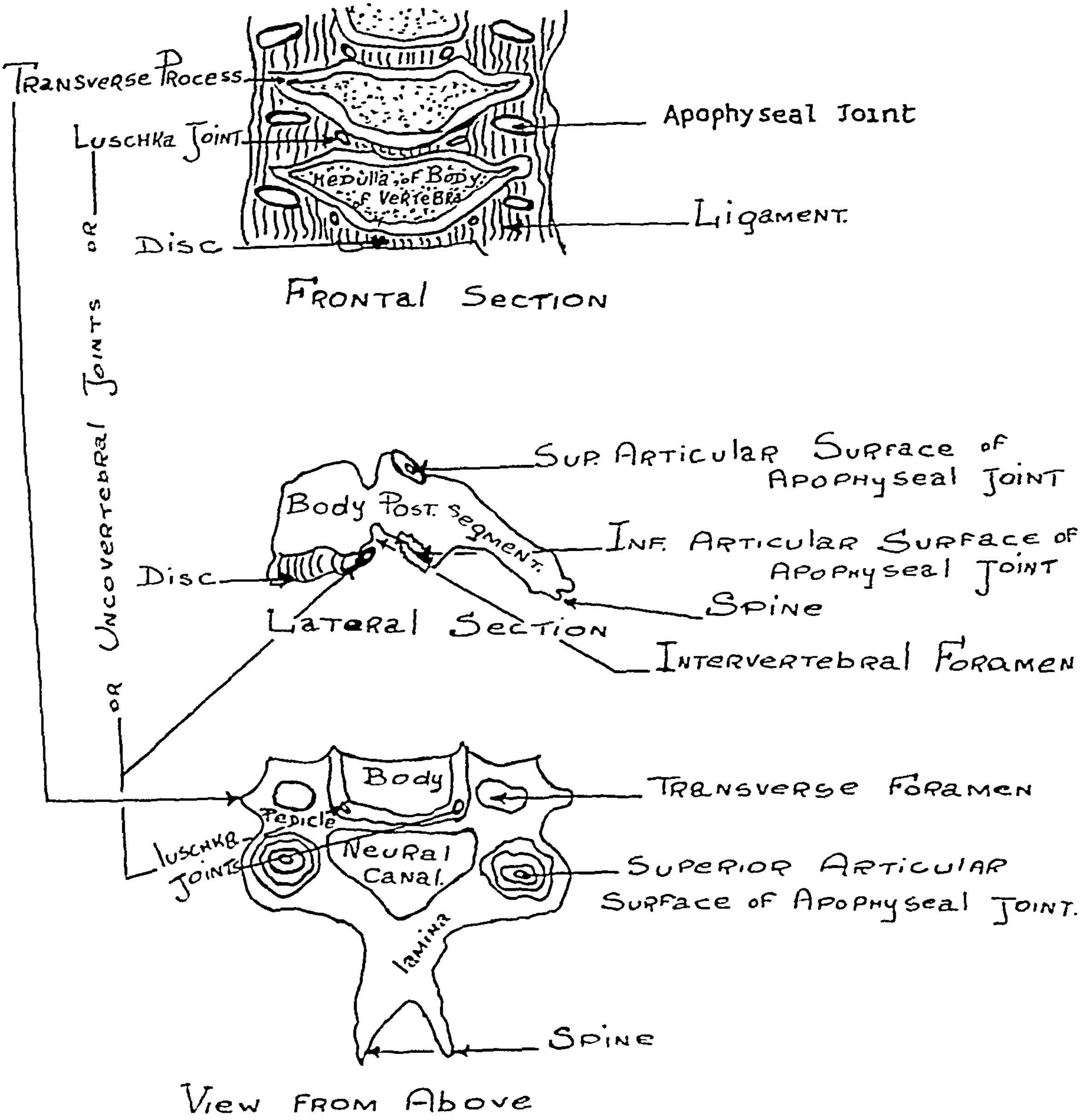

Fig. 1.—Schematic representation of sensory pathways and V. S. tract.

the bones entering into the formation of the joints. Primary joint involvement may occur as a result of *trauma*, arthritis of varying causes, rheumatoid arthritis or osteoarthritis. Subluxations are common, because the plane of the apophyseal joints is practically horizontal here.

Secondary joint involvement may occur, as with infection from a neighboring structure, e.g., tuberculosis of the bone, or after alteration in the intervertebral discs. These discs are avascular and too inert to be attacked by infections and neoplasms, and alteration here is usually

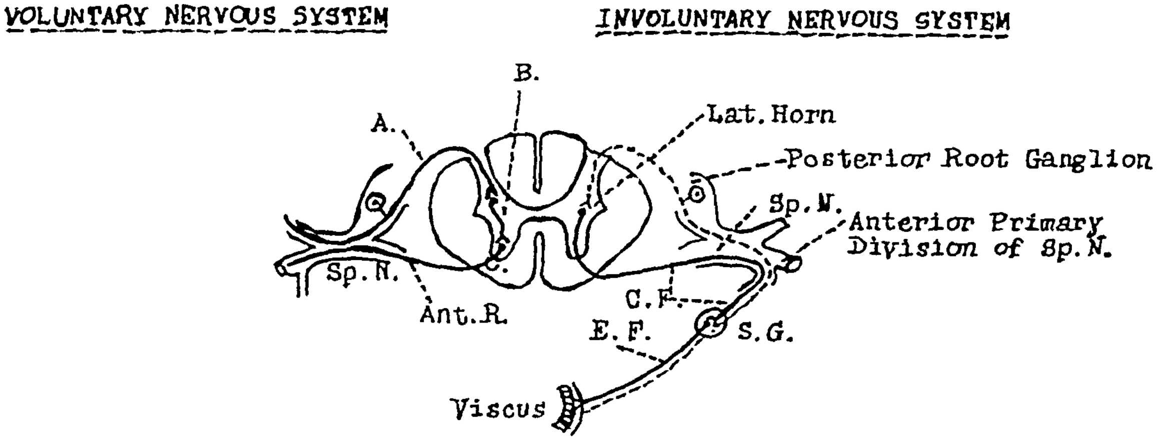

Fig. 2.—
A.—Afferent Nerve.
B.—Connective Nerve.
C.—Efferent Nerve.
Ant. R.—Anterior Nerve Root.
Sp. N.—Spinal Nerve.
Dotted Line—Afferent fibre (Involuntary Nervous System) with Nutrient Cell in posterior Root Ganglion.
Lat. Horn—Lateral Horn
C. F.—Connector Fibre for Sympathetic System.
S. G.—Sympathetic Ganglion
E. F.—Excitor Fibres of Sympathetic System.

directly or indirectly produced by trauma.

A sprain is a subcutaneous traumatic injury of the soft parts connected with a joint, accompanied by swelling. A strain is a sprain without swelling. Edema, effusion or hemorrhage alters the tissue density, which is clearly apparent in the roentgenogram. Sprains of the cervical portion of the spine are common, because of the mobility of the vertebral column in this region.

All biologic reactions proceed in one of two ways: they are either reversible or irreversible. In the first instance the tissue returns to its original state, or, in legal language, to the *status quo ante*, while otherwise the tissue involved is altered irrevocably from what it was before the insult. There are, however, different degrees of healing in the irreversible state.

The commonest causes of traumatic dislocations of the cervical vertebrae are motor accidents. crash landings, direct blows to the top of the head or forehead, as in diving, in a fall from a horse, or a severe fall on the buttocks—down a staircase or through stairs or an escalator. When predisposing causes are present that produce laxity of the ligaments, minimal trauma may produce dislocation of the cervical portion of the spine. Such accidents may occur in the presence of ordinary respiratory infections, alcoholism, pregnancy and the prodromal stages of the exanthemas, such as measles and chickenpox.

Trauma may produce changes that are roentgenographically latent for varying periods. Follow-up roentgen studies are always indicated, because pressure absorption and erosion of the injured intervertebral structures may take place afterward.[3]

Trauma may affect several areas at one time. The lower part of the back may be injured, and head injuries may concurrently involve the cervical portion of the spine.

At birth the spinal cord extends to about the third lumbar vertebra. With adulthood the spinal cord and emergent nerves reach a length that does not alter.

The emergent nerves are bound to the intervertebral foramens. Not infrequently, owing to a pathologic process and/or a physiologic one, such as aging, there is shortening of the vertebral column; a wrinkling of the nerve is produced, leading to a chronic condition of irritation that may be progressive, with compression and fibrosis. The cervical nerves fit the foramens rather snugly from front to back but have somewhat more room in a vertical diameter. In most subluxations, the articular process of the vertebra above slides forward and falls down upon the pedicle of the vertebra below, resting in the intervertebral foramen and thus producing nerve compression and pain.

The roentgen diagnosis of cervical displacements of the spine requires the utmost attention to detail and demands so much time, effort and expense that many *plans for screening* have been worked out to decide which cases should be subjected to full scrutiny. One such method has

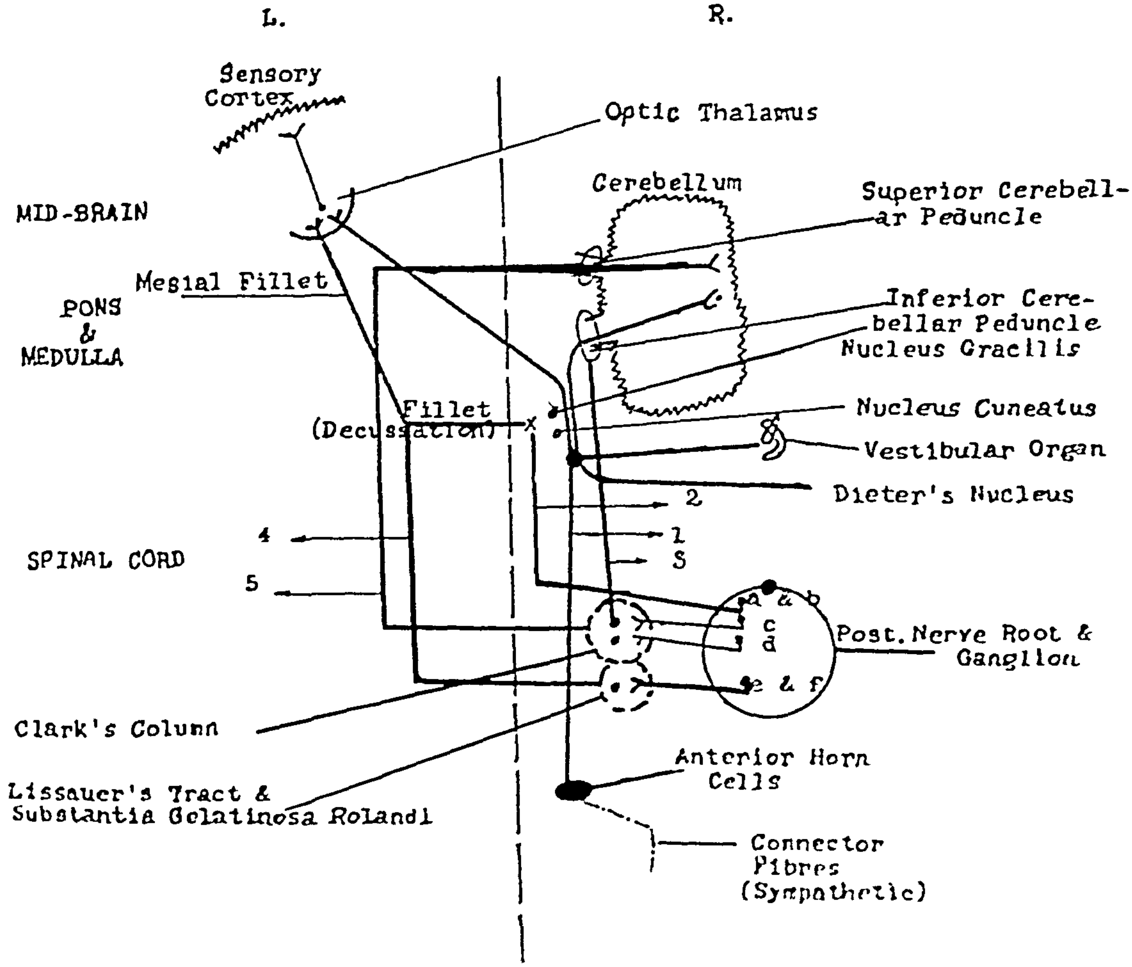

Fig. 3.—A. Fibers in Posterior Root and Ganglion. a & b—Proprioceptive and Touch [illegible]. c & d—Kinaesthetic, e. g., Muscle Tone, Equilibrium, Coordination. e & f—Pain, Temperature and Touch. B. Nerve Pathways. 1. V.S.—Vestibulo-Spinal Tract. 2. Tracts of Goll and Burdach. 3. Flechsig's Tract or Post Spinal Cerebellar. 4. Spino-Thalamic Tracts, Lateral and Anterior. 5. Gowers' Tract or Anterior Spinal Cerebellar Tract.

been described by Deutsch. Other methods have been worked out by George and Leonard and by Blaine, Jacobson and Grandy (New York; Mt. Sinai Hospital Group).

Symptoms of chronic complaints referable to the neck may be due to *alteration* of the usual physiologic curves but in all instances the area that should be studied most carefully is that behind the body, about the apophyseal joints and the intervertebral foramens, where osteophyte formation may occur. (Lower penetration, i.e., fewer kilovolts, may be used to great advantage for full demonstration of these osteophytes (see table, *Notes on Roentgenographic Technics*).) In the lumbar portion of the spine, such formations have been referred to as "sciatic hooks." In the cervical portion, the intervertebral disc spaces increase in size from above downward, while the intervertebral foramens diminish from above downward. (This progressive diminution in size of the intervertebral foramens also occurs in the lumbar region.)

The consequences of injuries to the neck are pain (this includes headache), muscle spasm and limitation of motion. While the first cannot be demonstrated roentgenographically, the latter two can. (These two are evidences of functional disturbance, and their causes should be sought.) In addition, not infrequently, ocular and vestibular disturbances appear.

In order to clarify the relation of signs to symptoms, a short neuro-anatomic synopsis is here given:

There are eight cervical nerves, and these divide into two rami, anterior and posterior. Essentially, the first four nerves are distributed to and supply the neck, part of the head, part of the face and the posterior portions of the shoulders, while the lower four cervical nerves, through the brachial plexus, supply the hands, the forearms, the arms, the lateral chest wall and, to a less extent, the anterior chest wall and the shoulders.

The sensory impulses[4] in the peripheral nerves are carried partly in the so-called motor nerves and partly in the cutaneous sensory nerves. The term "motor nerves" is a misnomer, as Sherrington showed that 40 per cent of the fibers are afferent and originate in the sensory ganglion of the spinal cord. Motor nerves might better be called "muscle nerves." These nerves

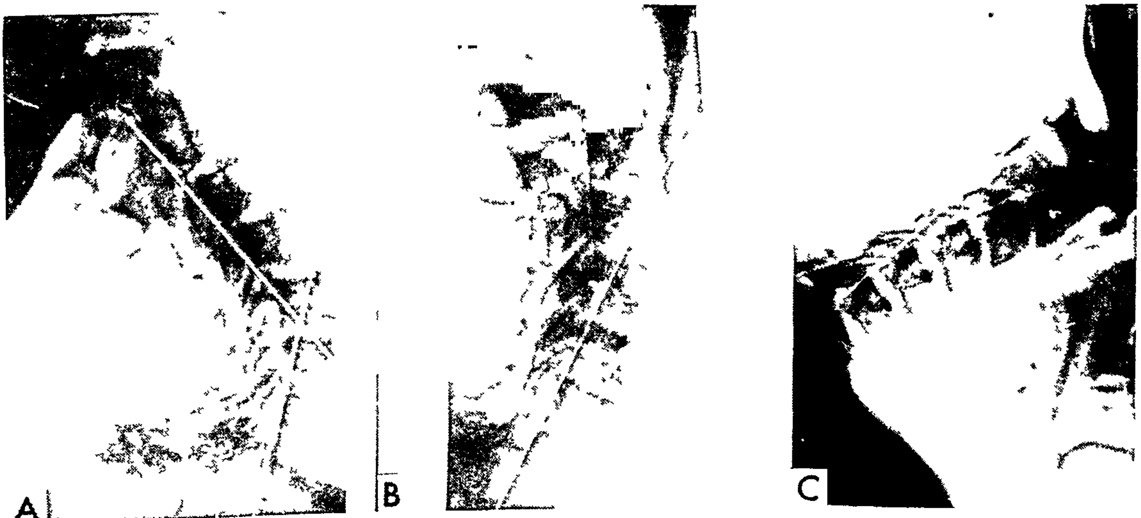

Fig. 4

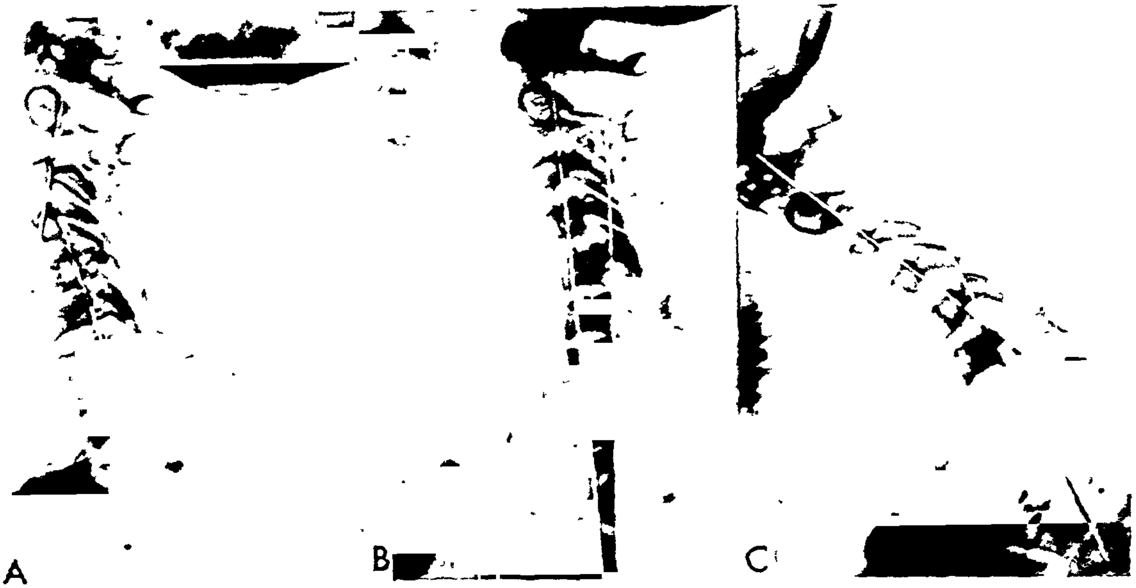

Fig. 5

carry the impulses of deep sensibility, which enable the following sensations to be appreciated: (a) pressure; (b) awareness of the position of the part, and (c) movements passively imposed upon a part. Excess pressure produces aching pain.

The cutaneous sensory nerves carry impulses of superficial sensibility from their end organs in the skin. These sensations include pain, touch, temperature and tactile localization and discrimination.

There are both crossed and uncrossed sensory pathways in the spinal cord. Sensations of pain, temperature and part of touch cross immediately over and ascend in the contralateral spinothalamic tracts, while the fibers that convey deep muscular and tendon sensibility, vibration and some touch ascend to the ipsilateral side. Ultimately, all sensory impulses decussate and terminate in the contralateral thalamus. The "central integrator," however, is not always able to discriminate between the side of the body involved and the uninvolved side, or to determine the extent of involvement. Towne, quoted in Lewin's *Fractures and Dislocations*, stated: "Neurologic examination indicates accurately the extent of interruption of the motor and sensory impulse." Nevertheless, such interpretations are extremely difficult, and roentgen examination is of great value.[1]

The posterior nerve roots contain fibers that produce relaxation of the blood vessels of the skin and skeletal muscles, while the sympathetic fibers to the blood vessels are predominantly vasoconstrictors.

The pioneer work of Bell and Magendie separated the "sensory" and the "motor" nerves. It remained for Sherrington to demonstrate that, with regard to the fibers of touch, temperature and pain, their pathways crossed to the contralateral side in close relation to the central canal of the cord in either the anterior or the posterior commissure. In the cervical portion of the cord this crossing is increasingly oblique, involving four or five segments, and Sherrington's formula explains why a unilateral pathologic condition, for example, at the sixth or seventh cervical level, manifests itself to the patient by pain not only at that level but on the opposite side at the first, second and third cerbeen described by Deutsch. Other methods have been worked out by George and Leonard and by Blaine, Jacobson and Grandy (New York; Mt. Sinai Hospital Group).

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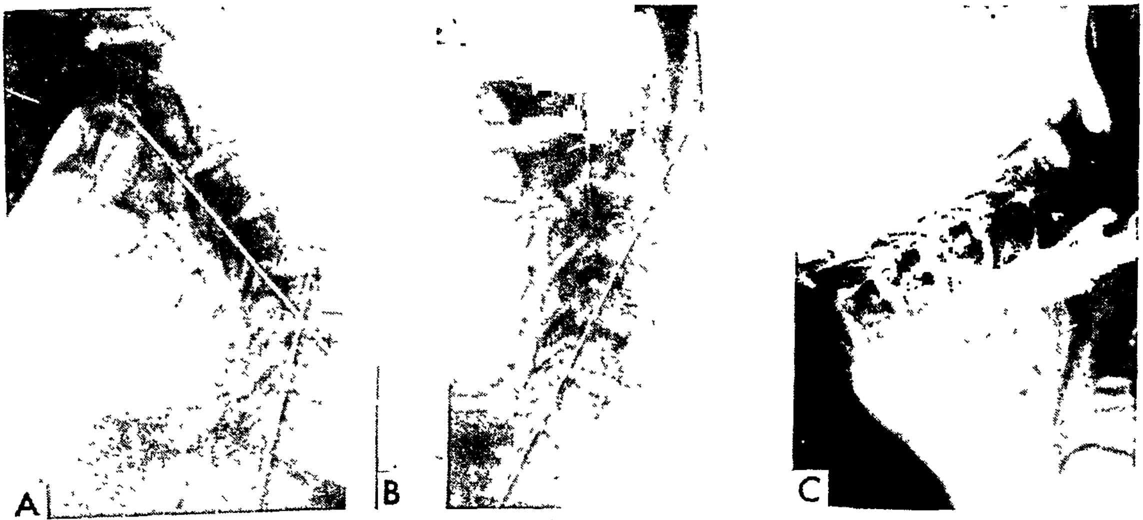

Fig. 4

supply the regional viscera and blood vessels. Sympathetic system connections of considerable clinical interest are those which go (1) to the eye, along the internal carotid artery; (2) to the ear, along the caroticotympanic artery; (3) to the nose, via the sphenopalatine foramen; (4) to the face, along the external carotid A. artery; (5) to the brain, along the vertebral, basilar and internal carotid arteries, and (6) to the skin of the head, face and neck with branches of the cervical nerves and plexus.

Interesting features of the cranial autonomic system include the following points:

1. The nuclei of origin of the fifth and eleventh nerves, the trigeminal and spinal accessory, are partly spinal and closely related to the upper cervical nerves.

2. About the cavernous sinus, cranial nerves (the first to the sixth, inclusive) intermingle with fibers from the sympathetics.

3. The hypoglossal nerve (the twelfth) intermingles with the first and second cervical nerves, the sympathetic system, the lingual branch of the seventh nerve and the ninth and tenth cranial nerves.

Dilation or contraction of the sensitive vascular channels stimulates the nerve endings, producing pain and headache.[5] Injuries to the ligaments and capsules can produce stimulation of the postganglionic fibers of the cervical sympathetic system, with referred pain confusing the clinical picture. (Involvement of this system offers an opportunity for additional therapeutic procedures for the relief of pain.)

Symptoms of diseases of the cervical portion of the spine are due not merely to the nature of the pathologic process but to the involvement of different parts of the vertebra. The following points are to be noted: 1. The cancellous bone of the body fractures much more readily and frequently than does the compact bone of the posterior segment. 2. Disease of the apophyseal joints is a common cause of symptoms, since (a) their mobility and plane of articulation predisposes them to luxation; (b) the relations of the vertebral vessels and the sympathetic nerves about them is readily altered. 3. *Limitation of motion is more pronounced* with apophyseal joint disease than with disc degenerative disease. 4. Not only is the spinal cord enlarged in the cervical region, the nerve roots are enlarged also. These are so thick that they almost completely fill the intervertebral foramens. "Sciatic hook" formation is therefore bound to be significant.

In the thoracic portion of the spine, where motion at the apophyseal joints is limited and the nerve roots thin, few, if any, symptoms can be attributed to similar roentgenographic signs. The full clinical picture requires the assessment of function as well as of structure.

The origins of some types of black-out spells, migraine, and post-traumatic headache, as well as pain and disability in the shoulder and the upper extremity, ocular and vestibular disturbances, may be roentgenographically demonstrable in the cervical portion of the spine. Chronicity of complaints may be due to incomplete repair, adhesions, chronic inflammation and subluxations or nerve involvement.

Author's Note: I am indebted to my teacher and especially Donald Mainland, M.D., Ch.B.D.Sc., etc., formerly Professor of Anatomy at Dalhousie University, and author of *Anatomy for Medical Students*, etc. and *Medical Statistics*, whose notes I still possess and use; Professor F. R. Hayes, under whom I studied comparative vertebrate anatomy, and was introduced to such texts as Sir Arthur Keith's *Human Embryology and Morphology*, and to the members of the Department of Roentgenology and Radiology of the New York Polyclinic Hospital in 1942 for encouraging me to proceed with my present studies.

RESUMEN

1. Se presenta un estudio de la columna cervical bajo los puntos de vista de l

vical levels.

The sympathetic ganglia are formed from neuroblasts that migrate from the dorsal ganglia and the ventrolateral laminae of the neural tube. Their segmental origin is obscured because of the migration of additional neuroblasts. Originally these neuroblasts formed collections that were dorsolateral to the primitive aortic ducts, and these pushed fibers among the vessels. This migration occurs not only in the trunk but along the courses of the cranial nerves.

The salient anatomic features of the sympathetic nervous system in the neck and head are as follows: The cervical portion of the sympathetic trunk consists of three ganglions connected by intervening cords; the cephalic portion is the prolongation of the superior cervical ganglion.

Notes on Roentgenographic Technic

The following factors are used with full wave rectified equipment:

- For patient with neck less than 9 cm. wide.
  - The lateral and oblique studies are done without a grid.
  - 6 feet t-f distance
  - 3/20 second
  - 200 milliamperes
  - 64 Kv.
- For patient with neck more than 9 cm. in diameter.
  - The lateral and oblique studies are done with a grid.
  - 6 feet t-f distance
  - 4/10 to 5/10 second
  - 200 milliamperes
  - 64 Kv.
  - (56 Kv. is used for oblique studies when sciatic hook formation is suspected.)
- The anteroposterior and anteroposterior open-mouth studies are made as follows:
  - The patient is supine on the table, and the Bucky diaphragm is utilized
  - 36 inches t-f distance
  - 1 second
  - 50 milliamperes
  - 64 Kv.
- In the oblique studies, the patient faces the casettes and twists his head so that his chin approaches the shoulder. With this maneuver, when the chin is right, the left-sided joints and foramens are better shown, and vice versa.
- For the lateral studies:
  - In neutral, the patient stands in the anatomic position and is asked to push his shoulders down.
  - In extension, he bends his head and neck backward.
  - In flexion, he bends his head and neck forward.
  - The patient is not to be aided in carrying out these movements, as the studies are concerned with dynamics as well as statics.[8]

Each division of the trigeminal nerve is associated with a sympathetic ganglion; the ophthalmic with the ciliary, the maxillary with the sphenopalatine and the mandibular with the otic and the submaxillary. In a sense, these sympathetic ganglia may be regarded as homologous with the posterior root ganglia of the spinal cord. Most of the fibers of the trigeminal nerve pass through the sympathetic ganglia without ending. (Of interest is the intimate connection, both anatomically and functionally, of this nerve with branches of the upper cervical nerves and, in particular, with the greater auricular nerve of the second cervical level, which is a posterior branch and not part of the cervical plexus. This is another example of a common embryonic origin.)

These sympathetic ganglia are more intimately related to other members of the cranial autonomic system, e.g., the oculomotor. Because of these connections, ocular disturbances may occur. *Vertigo* may be explained by the connections of the otic ganglion or, more probably, the tonic neck reflexes via the vestibulospinal tract. Corollary to this is the observation that anesthesia of the sphenopalatine and the stellate ganglia is successful in the treatment of pain in the neck and shoulder.

The cervical sympathetic receives no white rami communicantes from the cervical spinal nerves. Its spinal fibers are derived from the white rami of the upper thoracic ganglia of the sympathetic trunk, through which they ascend into the neck. The spinal component consists of preganglionic and visceral fibers. The cervical trunk does contain some postganglionic fibers. These sympathetic nerves supply the regional viscera and blood vessels. Sympathetic system connections of considerable clinical interest are those which go (1) to the eye, along the internal carotid artery; (2) to the ear, along the caroticotympanic artery; (3) to the nose, via the sphenopalatine foramen; (4) to the face, along the external carotid A. artery; (5) to the brain, along the vertebral, basilar and internal carotid arteries, and (6) to the skin of the head, face and neck with branches of the cervical nerves and plexus.

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RESUMEN

1. Se presenta un estudio de la columna cervical bajo los puntos de vista de [illegible]

embriología, anatomía, fisiología, anatomía topográfica y patología, puesto que la mayor valoración de los datos del radiodiagnóstico se apoya en conocer los fundamentos de estas materias.

2. Se estudian las bases necesarias de neuroanatomía, junto con la distribución de los plexos cervicales, la cadena simpática y el parasimpático craneal.

3. Se cita tambien la Fórmula de Sherrington, que explica algunas formas nerviosas.

4. Se estudia tambien la posibilidad de la patogénesis que explique las cefalgias postraumáticas.

5. Y finalmente se subraya y se explica la importancia de un estudio radiológico completo y adecuado de la columna cervical, con sus técnicas correspondientes.

ZUSAMMENFASSUNG

Die Röntgenbefunde der Halswirbelsäule können nur dann volle diagnostische Auswertung finden, wenn man grundlegend mit der Embryologie, Physiologie, Neurologie, Anatomie und Pathologie dieses Körperabschnittes vertraut ist. Aus diesem Grunde gibt der Verfasser in seiner Arbeit

1. einen Überblick über die Anatomie usw. der Halswirbelsäule,

2. die notwendigen neuroanatomischen Grundlagen einschliesslich der Verteilung der Halsnerven, der sympathischen Nerven und der autonomen Hirnnerven,

3. die Sherringtonsche Formel zur Erklärung gewisser Nervenverzweigungen,

4. eine wahrscheinliche Erklärung der Pathogenese posttraumatischer Kopfschmerzen und

5. einen Hinweis auf die Wichtigkeit einer vollständigen und sorgfältig ausgeführten Röntgenuntersuchung der Halswirbelsäule einschliesslich Angaben über die Technik.

RÉSUMÉ

Les diagnostics radiologiques exigent de solides connaissances embroyologiques, physiologiques et neurologiques, ainsi qu'anatomiques et pathologiques régionales. L'auteur présente:

1. une étude sur la colonne cervicale;

2. une analyse de quelques notions de neuro-anatomie, avec rappel de la distribution des nerfs cervicaux, sympathiques et craniens autonomes;

3. une description de la formule de Sherrington, expliquant certains schémas nerveux;

4. une étude sur la pathogénese des mauxode tête post-traumatiques.

5. L'auteur termine en insistant sur l'importance d'examens radiologiques complets de la colonne cervicale, et donne à ce sujet quelques indications techniques.

RIASSUNTO

L'interpretazione corretta dei dati radiologici richiede una conoscenza completa dell'embriologia, della fisiologia, della neuropatologia, dell'anatomia e dell'anatomia patologica.

L'autore, pertanto, fornisce (1) una descrizione anatomica della colonna vertebrale; (2) gli elementi fondamentali dell'anatomia neurologica, fra cui la distribuzione dei nervi autonomi cervicali e cranici; (3) la formula di Sherrington per interpretare alcune distribuzioni nervose; (4) la presumibile patogenesi della ce falea post-traumatica; (5) la tecnica per eseguire una completa e corretta indagine radiologica della colonna vertebrale.

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Flat Foot

W. H. GERVIS, F.R.C.S., F.I.C.S.

TUNBRIDGE WELLS, ENGLAND

THE first stage of the deformity of pes plano valgus, or flat foot, does not result from the collapse of an arch. On the contrary, the foot leans over to become an archlike structure, which it was not before.

These observations were made with a special stool having a glass top and a mirror beneath, by means of which it is possible to see the foot and the footprint at the same time.

Figure 1*A* illustrates a typical case of flat foot. It can be seen that the calcaneum is leaning over to the medial side.

Note the footprint visible in the mirror and observe that the lateral border of the foot is not weight-bearing; only the heel and the metatarsal heads bear weight. Such a footprint is usually illustrated in the textbooks as that of pes cavus, and it may occur with that condition. I have now confirmed my impression that it has occurred in the first stage of pes plano valgus in well over a thousand cases.

Figure 1*B* is the anterior view of the same patient. Note the similar footprint and the valgus appearance of the ankles.

The knees must always be included in routine examination of the feet. In this case, as in a large proportion, the patellae are pointing medially. Thus the legs and, therefore, the talus are rotated medially. In my opinion the rotation of the talus is the cause of the deformity, for when it is corrected the deformity disappears.

Figure 1*C* shows the same child standing, with medial rotation of the legs corrected. The patellae now point forward in the direction of the feet; the ankles no longer have the valgus appearance, and the footprint is normal, with the lateral border bearing weight.

The observations presented by the author were made by means of a special stool, with a glass top and a mirror beneath. By means of this stool it is possible to observe that the deformity results from a medial rotation of the talus, for when the patient corrects that medial rotation the valgus deformity of the ankles is corrected, and at the same time the footprint becomes normal, with the lateral border bearing weight. On allowing the patient to let the medial rotation recur, it can be observed that the rotation of the talus carries the body weight to the medial side and the foot leans over to the medial side, with the result that the lateral border ceases to be weight-bearing.

Thus the current idea that flat foot is due to the collapse of an arch is incorrect.

Read at the First Congress of the European Federation, International College of Surgeons, Brussels, May 15-18, 1958. Submitted for publication Oct. 17, 1958.

Figure 1*D* is a posterior view. The patient is standing, with the medial rotation corrected, showing the same features, with the calcaneum no longer leaning over.

Figure 2, *A* and *B*, is a radiograph of the same patient standing *(A)* in the corrected position as in Figure 1*C*, and *(B)* in the uncorrected position as in Figure 1*B*, showing medial rotation of the talus.

Figure 2*C* represents an example of flat foot resulting from out-toeing. The patellae are pointing forward, but the feet point outward. Thus the talus is rotated medially, in relation to the foot.

The patient's ankles exhibit the usual valgus appearance. The typical first-stage footprint is evident. The lateral border does not bear weight. On correction of the out-toeing and therefore the rotation of talus, the deformity is corrected and the footprint becomes normal (Fig. 2*D*).

Figure 3*A* is the posterior view of the same patient standing, corrected, showing the same features.

Figure 3*B* is the posterior view of the same patient, out-toeing again, thus showing the severe deformity that had been corrected.

This position of the foot is not stable, for the foot is leaning over to the medial side, and more weight is thrown on the first metatarsal. As a result the ligaments may slowly stretch, allowing the first metatarsal to become dorsiflexed, and thus in time the lateral border of the foot will once again bear weight.

Fig. 3*C* shows such a case, with the legs rotated medially and an obvious plano valgus deformity. The footprint, however, resembles the normal, with the lateral border bearing weight.

I call such a footprint, in cases of this deformity, Stage 2. If the deformity remains untreated, further dorsiflexion of the first metatarsal may occur, resulting in weight-bearing by a broader area of the sole, until finally Stage 4 is reached, with the classic footprint of the flat-footed.

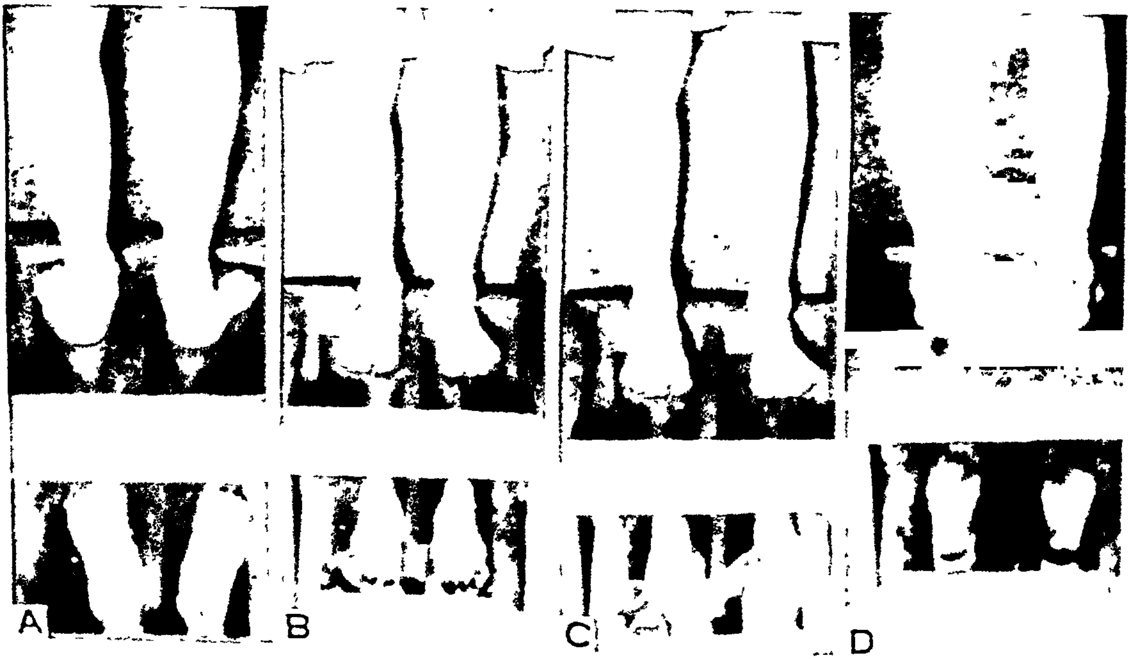

Fig. 1.

There are some who cast the blame on hypermobility of the first metatarsal as the cause of the deformity. These observations of the foot from beneath, however, surely suggest that the primary deformity is rotation of the talus, which throws increased weight on the first metatarsal. Hypermobility and dorsiflexion are secondary to this.

Weak muscles are also blamed for this deformity. If one considers the action of muscles in standing, however, there is no evidence to support such a theory.

In normal standing Nature does not waste muscle tone, but utilizes balance. One stands with the knees just hyperextended and the quadriceps relaxed. This fact is known to every schoolboy, for a sharp tap behind the knee of an unsuspecting person will cause him to fall.

The same principle applies to the foot. The lateral border of the foot is bearing weight, so the fifth metatarsal is resting on the floor, with the cuboid resting on its base. The articular surface on the cuboid for the lateral cuneiform is not on the medial surface, as some books state, but more nearly on the superior surface. Thus the cuneiforms are resting on the cuboid. Taking the foot as a whole, one bone is resting upon another, and it will balance thus, rather like a rough wall. until the balance is upset by rotation of the talus.

In the cases illustrated, rotation of the talus was due to an error of posture, for correction of the posture also corrected the deformity. One of the factors causing this error of posture can be surmised if one studies the development of posture. A baby learning to walk and stand will constantly rise on its toes. This action is so often repeated that, in addition to the childish love of movement, there is surely also an attempt on the part of the child to learn the proper way to balance. This activity is soon prevented by stiff shoes in which the child is unable to rise on his toes, so he gives up the unequal struggle and just plods.

If one watches schoolchildren who have this deformity, one can see that they just plod, and as a result stand badly, some twisting their legs in, some turning their feet out.

In addition to these postural causes of medial rotation of the talus, there is an anatomic one, namely, medial torsion of the tibia. In this condition there is a twist in the shafts of the tibias, so that the feet are set pointing in and the child is pigeon-toed. If such a child stands with his feet parallel, the talus is rotated medially by the twist of the tibia; this results in pes plano valgus, which is often severe.

Diagnosis is made easier by means of the stool.

The toddler shown in Figure 3*D* has an obvious severe plano valgus deformity of the right foot, and the footprint is in Stage 4, the whole sole being weight-bearing. There is no medial rotation of leg or out-toeing, however, for the patella points in the direction of the foot. The left foot is being held in the in-toeing position, which points the foot in the direction of the talus. It can be seen that the deformity has been corrected, and the footprint is normal.

Treatment is not difficult with children of this age. Night splints of the Dennis Browne hobble type are worn for three to six months. The feet must be turned out; the bar must not be too long and must be bent to invert the foot, so that the lateral rotation is exerted on the ankle rather than the foot. By day the child must have opportunity to play barefoot in order to develop foot action and balance.

Treatment of Flat Foot.—Treatment can be effective only if it controls the medial rotation of the talus.

No form of arch support, wedged heel or built-up shoe can correct the medial rotation of legs. All forms of support in-

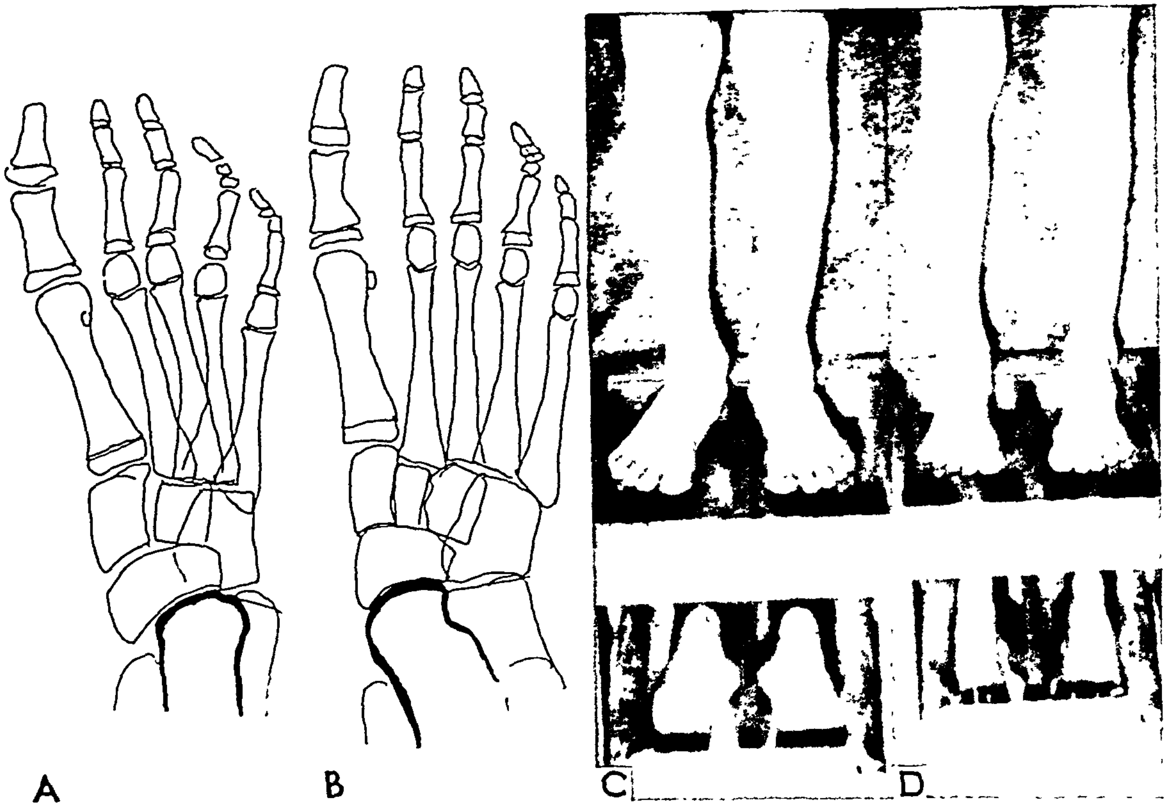

Fig. 2.

crease the weight of the shoe and make it stiffer, thus encouraging a plodding gait and out-toeing. As these are both important factors in the causation of this condition, support can be summed up as not only useless but harmful. Parents are therefore advised that shoes should be light and flexible.

Treatment in the majority of cases is by exercises, but this term needs qualification, for these exercises differ in principle and practice from the routine exercises for flat foot. The aim is not to build up weak muscles by repeated movements, for the muscles are not weak.

The object of the exercises is to teach the child to correct the deformity and to stand in a position of proper balance always. Many of the routine exercises fail to correct the deformity.

The children are also taught to walk properly, that is, rising on the toes of the carrying leg as the aftercoming leg moves forward. The feet must be parallel, of course. This type of gait is beneficial, because the natural pull of the muscles in rising on the toes will tend to correct the rotation of the legs and also the deformity. A child who is walking, with the foot in active use, is therefore more likely to be in the corrected position when he stands.

The routine at a class is as follows: Every child is taught to stand, with the feet not turned out and the medial rotation of the legs corrected, i.e., with the patellae pointing forward in the direction of the feet. The toes must be relaxed and the metatarsal heads on the ground. The general posture must also be supervised. Some children will need a little manual assistance at first to help them correct the medial rotation.

It must be impressed on them that this is the way in which they are to stand al-

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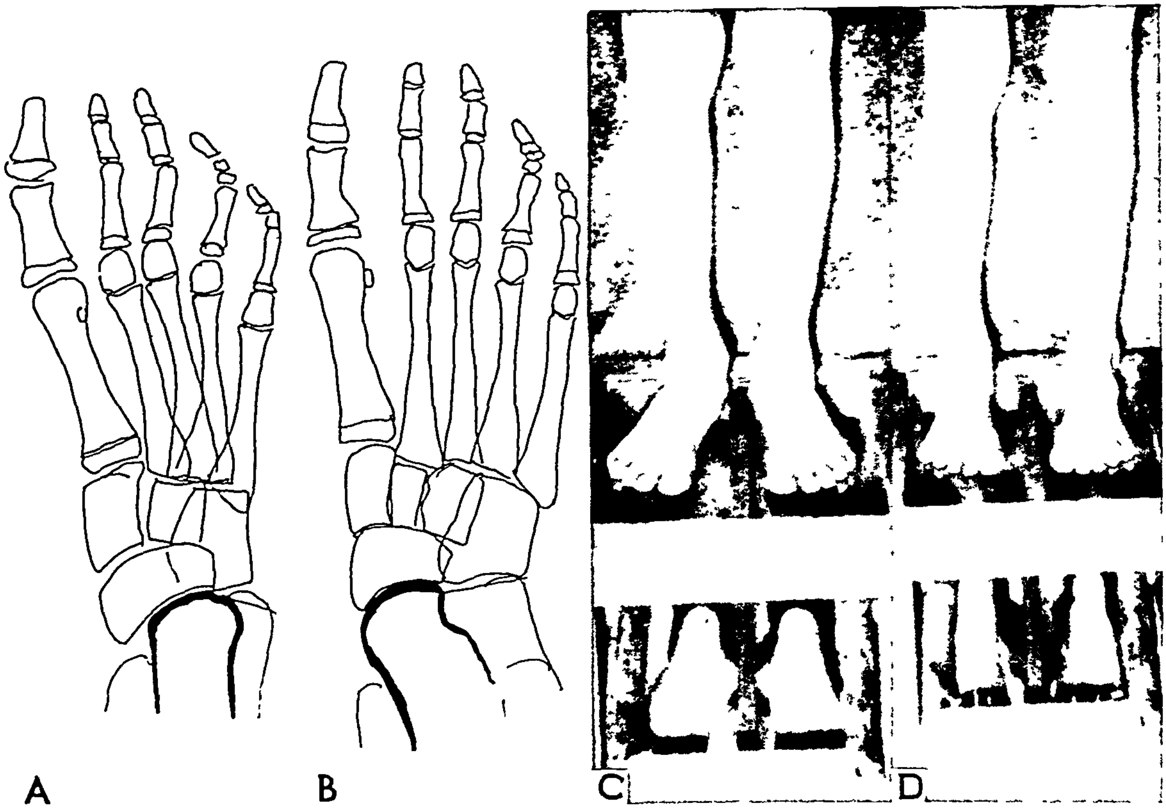

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Coexistence of Pulmonary Carcinoma and Active Tuberculosis of the Lung

H. MOBARHAN, M.D., F.I.C.S.*

ONEONTA, NEW YORK

The author reviews the literature on the coexistence of bronchogenic carcinoma and active pulmonary tuberculosis.

Cases are presented in which both active tuberculosis and bronchogenic carcinoma were present, and in which the differential diagnosis was difficult.

Tuberculosis of the lungs can be treated and cured by drug therapy even in the presence of bronchogenic carcinoma.

A case of mesothelioma of the upper part of the right pleural cavity and the Pancoast syndrome is reported.

Two cases of tuberculosis are presented in which the roentgen picture simulated carcinoma and the condition present proved to be only tuberculosis.

A case of sarcoma of the left upper lobe in a 24-year-old man and a case of lipoid pneumonia, simulated carcinoma and tuberculosis are reported.

COEXISTENT pulmonary carcinoma and active pulmonary tuberculosis have been the source of clinical and pathologic interest for many years. Bayle reported the first case in 1810. Particular attention has been paid to bronchogenic carcinoma involving major bronchi, in which the diagnosis is likely to be obvious both clinically and by roentgen ray, but not to those peripheral lesions which, by roentgen study, cannot be differentiated from tuberculosis.

About one hundred years ago Rokitanski expressed the opinion that carcinoma of the lung and pulmonary tuberculosis are antagonistic, a theory that has been disproved completely. The occurrence of a neoplastic lesion at the site of old tuberculosis, bronchiectasis or a bleb is not a sufficient reason to consider the lesion premalignant. It has also been said, but not acceptably, that metaplastic changes of mucosal cells from the columnar to the squamous type in an old or healed tuberculous cavity predispose to the development of squamous cell carcinoma. In support of this theory is the more common occurrence of squamous cell carcinoma and tuberculosis in the upper lobe, the differential diagnosis of which is quite difficult. The presence of calcium in isolated lesions does not always mean tuberculosis. Malignancy occurs in lesions containing calcium.

Of 5,600 patients admitted for diagnosis and treatment to this sanatorium during the past twenty-one years, 105 cases of carcinoma were detected, in 15 of which

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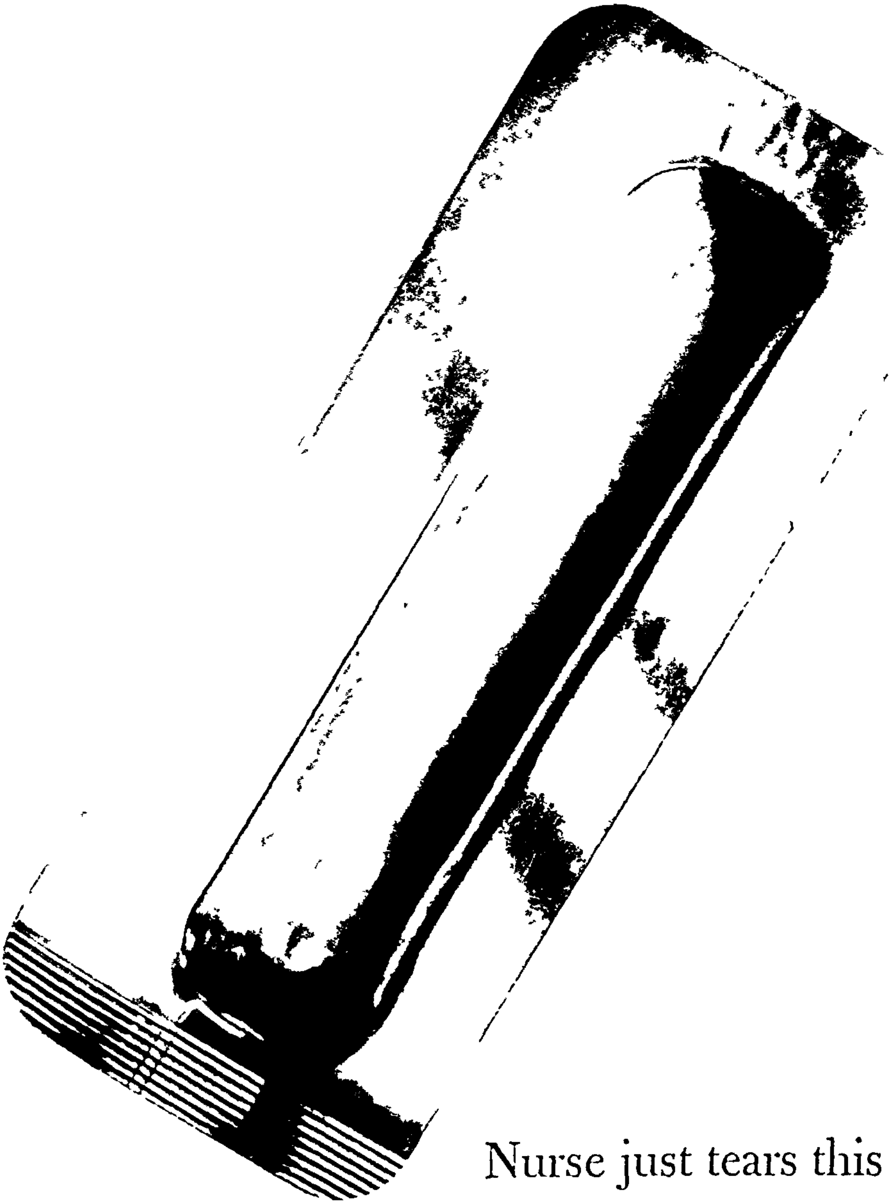

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their sputum after being "positive" for a long time, converted to "negative," yet autopsy, later, revealed only malignant lesions.

There are many similarities between tuberculosis and carcinoma of the lung. Both develop insidiously; both produce shadows on the thoracic roentgenogram that may be detected during a survey in advance of symptoms; and, finally, both, in their silent phase, show great similarity in roentgenographic shadows (Overholt). The incidence of pulmonary carcinoma is increasing; that of tuberculosis is decreasing.

Finally, with the common statement that roentgen relapse in patients treated with antituberculosis drugs is a common occurrence, we should not forget that in some of these cases the lesion may be early carcinoma rather than relapsing tuberculosis.

REPORT OF CASES

CASE 1.—W. W., a 38-year-old white man, was admitted to the hospital on May 13, 1940. He had been a heavy smoker for many years. For three months he had had grippe-like symptoms, malaise, loss of appetite and a productive cough. The sputum was "positive" and the temperature about 101 F. The sputum remained positive by smear throughout the hospital stay. The diagnosis on admission was tuberculosis of the lungs, with a strong suggestion of carcinoma. In Figure 1*A*, taken on June 18, there is dense, rather uniform clouding, suggesting consolidation.

This patient underwent 5 bronchoscopic procedures, and the last one was reported as revealing carcinoma. Operation was done on November 20 (right pneumonectomy). The lesion proved to be bronchogenic carcinoma of the upper lobe, with tuberculosis and suppuration.

The patient died two years after pneumonectomy.

CASE 2.—D.L., a 51-year-old white man admitted to the hospital on Feb. 14, 1949, had a history of two months' pain in the lower part of the back and spine, radiating to the left side. There was a history of intermittent pleurisy on the left side during the past five years, but not recently. The patient said that there were no night sweats, nocturia, dysuria, hematuria or pyruia at time of admission. The sputum contained tubercle bacilli.

A chest film taken on Jan. 31 had revealed minimal tuberculosis at both apices, without definite evidence of cavity; pleurisy with effusion, on the left, cause undetermined, possibly tuberculosis or neoplasm. There was a density in the region of the lower portion of the left root. Thoracenesis was done, and examination of the pleural fluid disclosed carcinomatous cells.

A chest film taken on April 13 (Fig. 1*B*) revealed that fluid had apparently reaccumulated. A bronchoscopic study revealed no pathologic condition in the bronchi on either side, including the bronchus of the lower lobe of the left lung. The patient died on Jan. 4, 1950, and autopsy revealed bronchogenic carcinoma of the lower lobe of the left lung, extending to the upper lobe.

CASE 3.—S. K., a 70-year-old white man, was admitted to the hospital on July 15, 1952, with a prolonged history of tuberculosis and positive sputum. This patient had also been a heavy smoker for many years. He was in very poor shape.

Fig. 1*C*, taken on June 25, revealed an area of pronounced homogeneous density between the anterior segment of the third and fifth ribs, with a relatively sharp lower border and a less well defined, but rounded, upper border. On the left side there were signs of honeycombing and accentuated markings. The diagnosis was tuberculosis of the lungs, far advanced, and possibly malignant disease of the lung.

The patient had a rapid downhill course and died on July 22, about a week after admission. The homogeneous density seemed to have been due to bronchial obstruction because of which malignant change was suspected. This was confirmed by the autopsy observation of carcinoma in the right lung.

CASE 4.—F.B., a 67-year-old white man admitted to the hospital on July 22, 1952, had been a heavy smoker for many years. There was a history of cough for many years. The patient had lost weight but denied having had hemoptysis, pleural pain, etc. Dyspnea had been present for 3 months. The sputum was positive for tubercle bacilli throughout hospitalization. Dullness anteriorly and posteriorly throughout the entire right chest.

A chest film taken on October 22 (Fig. 1*D*)

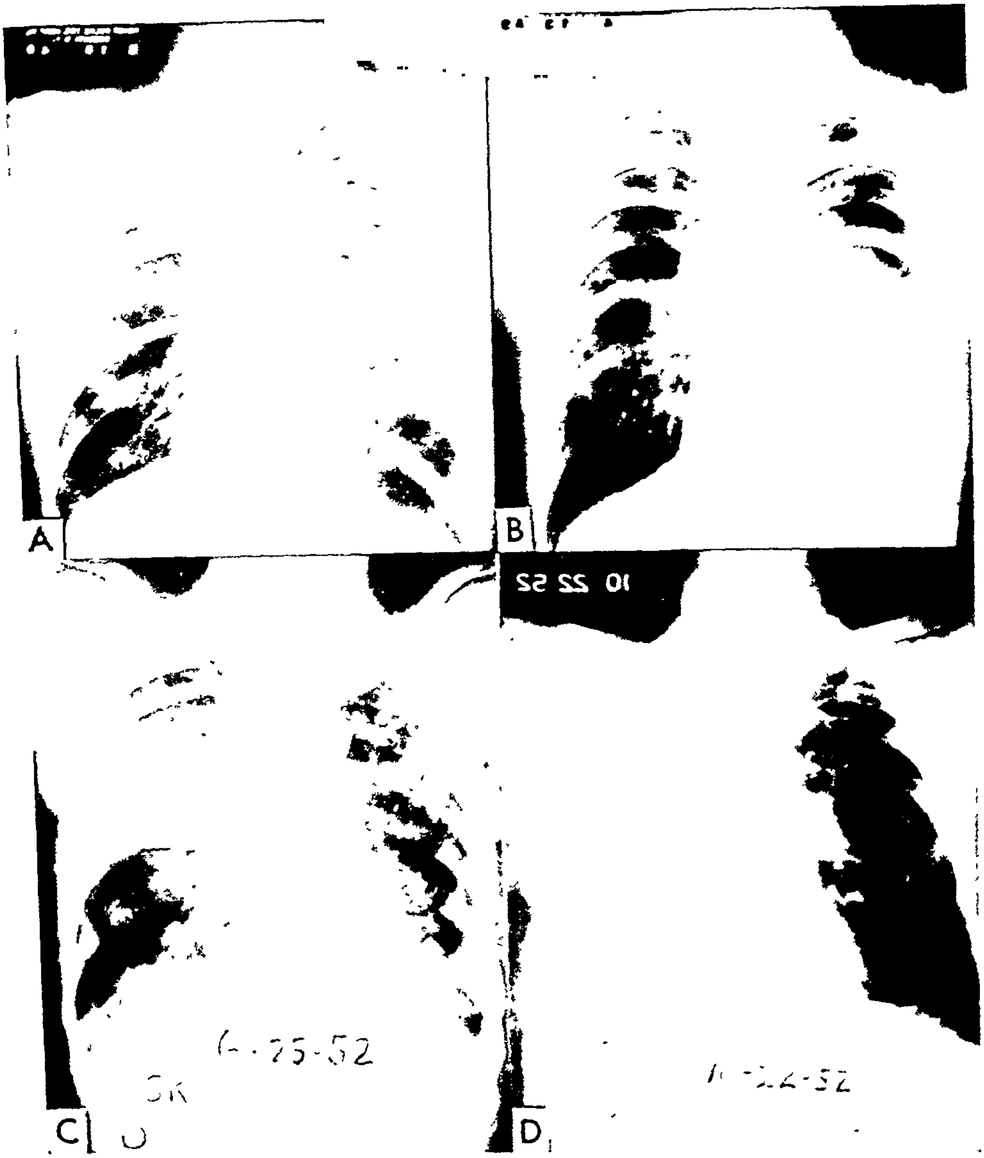

Fig. 1 (see text).

revealed haziness throughout the right lung, with homogeneous density below the posterior segment of the seventh rib. The roentgen diagnosis was pulmonary suppuration in the right lower lobe, probably secondary to bronchial obstruction and probably neoplastic.

Bronchoscopic aspiration revealed carcinomatous cells.

Autopsy later revealed gelatinoid tuberculous pneumonia of the entire right lower lobe, with obstruction of the lower bronchus by tumor.

CASE 5.—J. C., a 65-year-old white man, was admitted to the hospital on March 30, 1953, with a long-standing history of tuberculosis almost thirty years. Old roentgenograms revealed tuberculosis in the right lung. About six months prior to this admission, the patient had had cough, cold, night sweats and blood-streaked sputum. The sputum contained tubercle bacilli. Triple drug therapy was started on March 10.

Fig. 2A, taken on March 17, showed an infiltrate measuring 5 cm [illegible], rather [illegible]

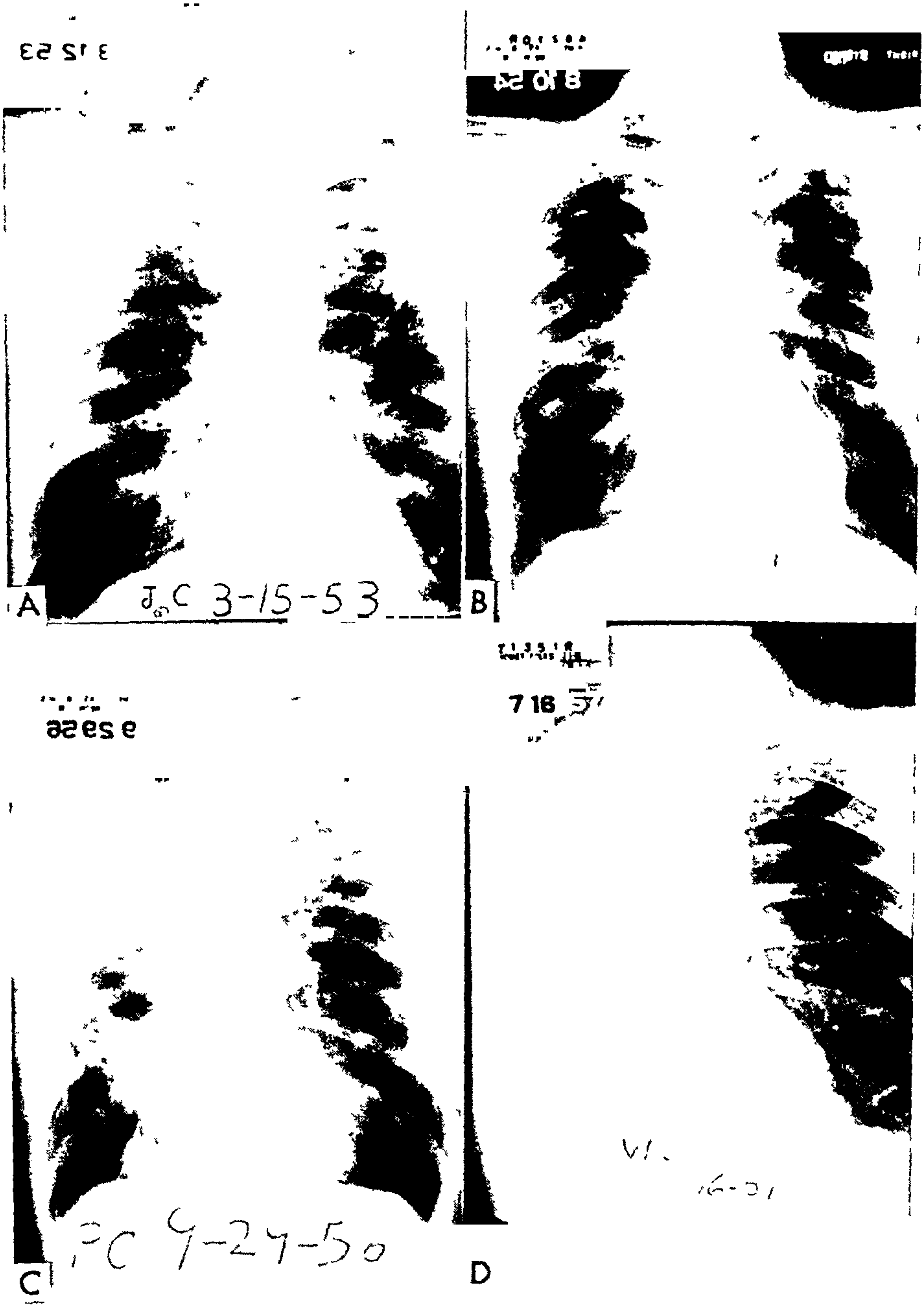

Fig. 2 (see text).

mogeneous, with several punched-out radiolucent areas suggesting a cavity. The diagnosis was: suspected tuberculosis of the lungs.

Needle biopsy of the lung on June 9 revealed definite evidence of malignant tumor invading the chest wall.

The patient's general condition was very poor. The pathologic report on a submitted specimen stated that malignant tumor, infiltrating the muscle tissue, was present. The autopsy report (July 11) read "bronchial carcinoma of the left upper lobe, with abscess formation distally and extension to the pleura and chest wall, and erosion of ribs."

CASE 6.—J. O., a 59-year-old white man admitted to the hospital on Aug. 9, 1954, had been a heavy smoker for at least forty years. There was a history of cough, small amount of sputum, thoracic pain, fatique, shortness of breath and loss of weight, of short duration.

This patient had been admitted to another hospital with a diagnosis of tuberculosis of the lungs and then transferred to us. A chest film taken on admission (Fig. 2*B*) revealed the root shadow on the right side to be prominent, especially below, toward the lower lobe. The left side showed honeycombing in the extreme apex. The roentgen diagnosis was tuberculosis of the lungs, moderately advanced, active, with a strong suggestion of carcinoma in the right lower lobe.

Autopsy revealed bronchogenic carcinoma of the right lung, with local metastases.

CASE 7.—C. P., a 65-year-old white man, was admitted to the hospital on Sept. 28, 1956. He had been a heavy smoker for many years. There had been loss of weight, poor appetite, scanty sputum, shortness of breath and fever for two months. The temperature on admission was 101 and 104 F. There were enlarged nodes in the left and right supraclavicular areas. The diagnosis before admission was tuberculosis of the lungs, far advanced. The sputum was positive for tubercle bacilli but negative for carcinomatous cells. Under antituberculosis drug therapy the number of bacilli decreased, and there were few negative reports later.

Fig. 2*C*, taken on September 29, showed a large amount of dense infiltration in the upper third of the right lung. Above the first interspace there was an irregular radiolucent area measuring at least 2.5 by 4 cm. and probably representing a cavity. A second radiolucent area was present in the second interspace. There was marked density overlying the upper portion of the root and in the middle half below the root. There was a large amount of mottling. The diagnosis was pulmonary tuberculosis of the lungs, far advanced, of the right upper, middle and lower lobes, with cavities in right upper lobe and probably also in the right lower lobe.

A chest film taken on April 2, 1957, in comparison with previous film, showed clearing and construction, especially in the right upper third of the right lung, with considerable reduction in the size of the residual cavity above the first interspace.

The patient died on May 20, 1957. The autopsy report was as follows: "Tuberculosis right upper lobe, apical segment, and right lower lobe. Open cavity in the right lower lobe and healed cavity in the left upper lobe. Carcinomas of the right stem bronchus extended into the right upper lobe bronchus, with tumor lumps in the right upper lobe."

CASE 8.—W. S., a 68-year-old white man, was admitted to the hospital on May 14, 1957, with a history of frequent cough, hemoptyses, a temperature of 101.4 F., and loss of weight, of recent duration. He was being given antituberculosis drugs. The sputum was positive for tubercle bacilli. Bronchoscopic study revealed tumor of the right main bronchus. The pathologic diagnosis was oat cell carcinoma.

Chest films taken on May 17, 1958, showed tuberculosis far advanced of the upper, middle and lower lobes of the right lung, with a cavity in the right upper lobe.

On July 16 (Fig. 2*D*) there was exceedingly marked homogeneous density throughout the right hemithorax, with a pronounced mediastinal shift. Apparently the right main bronchus was completely blocked by carcinoma.

A chest film taken September 17 showed a marked decrease in homogeneous density throughout the right lung. Apparently the blockage was removed after a biopsy specimen had been taken bronchoscopically.

A chest film taken on November 19 showed further clearing of pleurisy and of the dense mottling in the right base.

Changing atelectasis is a roentgen manifestation which is a sign of carcinoma. It was quite evident in this patient.

CASE 9.—F. R., a 53-year-old white man, was admitted to the hospital on June 3, 1954. He had been a heavy smoker for 39 years. There were cough and expectoration, positive sputum, weakness, hoarseness, poor appetite and loss of 30 pounds (13.6 Kg.) in weight.

A chest film taken on admission (Fig. 2*E*) revealed far advanced tuberculosis of the upper and lower lobes of both lungs, with cavities in both upper lobes and probably in the left lower lobe.

Under antituberculosis drug therapy, the patient improved. The sputum became nega-

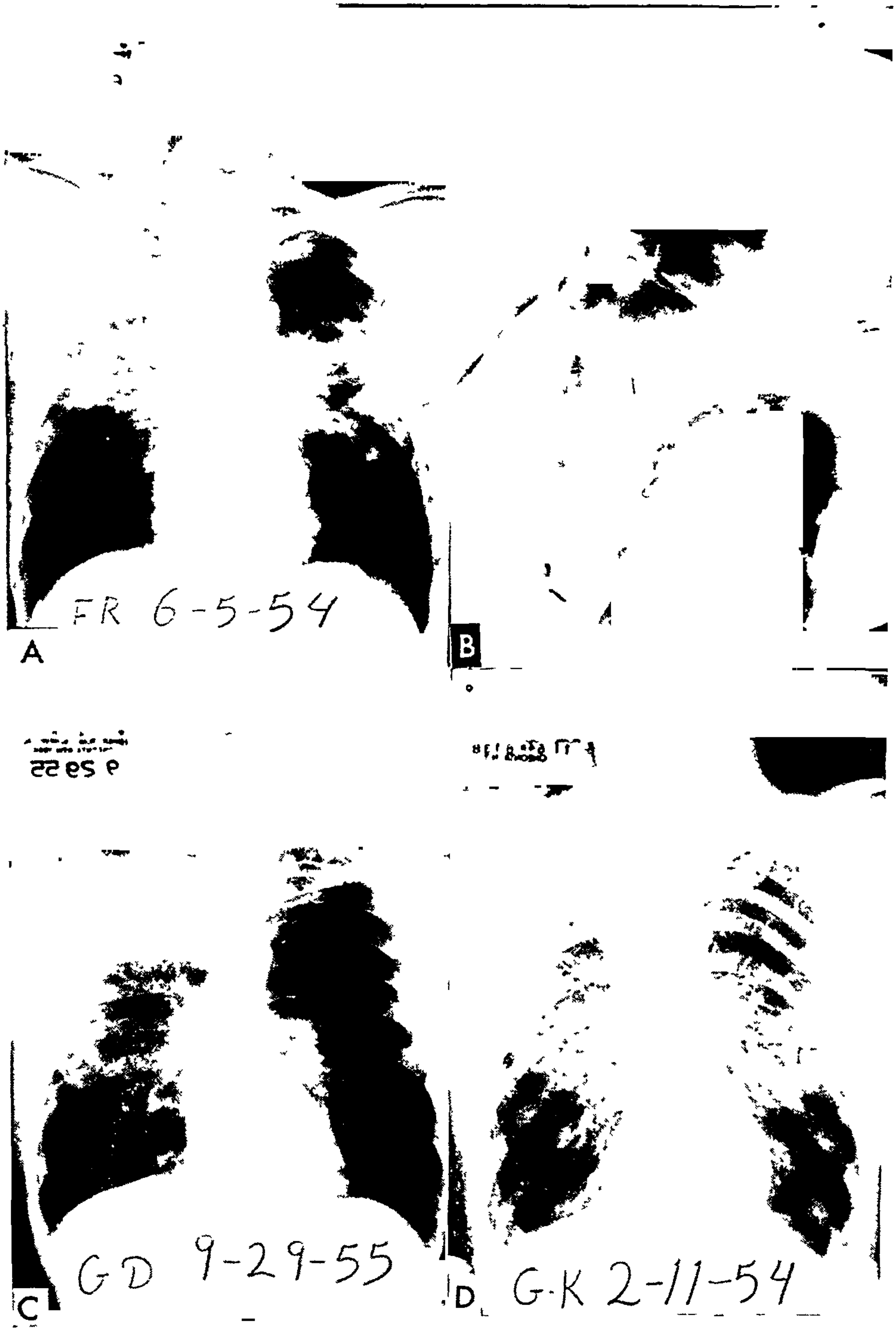

Fig. 3 (see text).

tive, and a thoracic roentgenogram revealed clearing.

A film taken Dec. 7, 1955, showed pronounced clearing of infiltration and shrinking of the cavities in both lungs. Another, taken on Dec. 4, 1956, showed clearing in both lungs, with pronounced shrinking and virtual disappearance from view of areas suggesting cavities. There was persistent, rather noticeable density over the right apical area. This shadow showed up very gradually. At first it was not easy to determine whether it was a new change in cavities or a new shadow.

A chest film taken on Aug. 6, 1957, showed that the original tuberculosis was thoroughly cleared up, but the persistent shadow in the right upper lobe looked like a uniformly hazy area of density. A film taken on September 26, an anteroposterior view of the upper right ribs (Fig. 3*B*) showed definite evidence of erosion, particularly along the inferior margin of the posterior segment of the second rib on the right. Change was readily apparent in the density of the right upper lobe, which by this time was definitely suggestive of malignant tumor.

Bronchoscopic study gave negative results, and thoracotomy, performed on October 10, revealed Pancoast tumor, histologically a mesothelioma, located in the uppermost portion of the parietal pleura, involving the visceral pleura as well as the parenchyma of the lung, but only about 2 or 3 mm. thickness of the lung tissue. The tumor had extended over the vertebral borders and seemed inoperable. The patient, late in hospitalization, had severe pain along the right ulnar nerve, which was definitely due to extension of the tumor. This pain was relieved 90 per cent by operative crush of the right ulnar nerve. At the time of writing the patient is still alive and in the hospital. Although thoracic roentgenograms were taken bimonthly, the disappearance of tuberculous shadows and the appearance of the neoplastic lesion were intermingled and confused. Sputum examinations and exploratory thoracotomy, however, revealed that the tuberculous lesions were completely healed.

CASE 10.—G. D., a 46-year-old white man admitted to the hospital on Sept. 22, 1955, was known to have been a heavy smoker for many years. There was a history of "sharp and tearing" pain in upper right portion of the chest, with nightsweats of two months' duration. The sputum was occasionally blood-streaked. The patient was afebrile on admission. The sputum was strongly positive for tubercle bacilli. Fig. 3*C*, taken on September 29, revealed in the right lung, above the posterior segment of the sixth rib, an area of relatively homogeneous density with a rather rounded lower border. The diagnosis was tuberculosis of the lungs,

with pronounced shrinking and virtual disap-

Bronchoscopic study revealed no abnormality; no tumor cells were detected in the bronchial secretion. On October 6, lobectomy of the upper lobe of the right lung and thoracoplasty were performed.

Even at the time of operation it was difficult to differentiate between tuberculosis and carcinoma. The pathologist reported that the specimen contained only far advanced tuberculosis, with a cavity in the apical segment. No carcinoma was detected.

This case is presented also to show the similarity of roentgen manifestations of the two diseases and the difficulty of differentiation. The patient was given antituberculosis drugs on admission. Resection was done three weeks after admission. A long course of antituberculosis drug therapy was administered after operation, and the patient made an uneventful recovery. He was transferred back to the Veterans Administration Hospital from which he had come and remained there for about a year. In 1956 a bronchial secretion study was done there, which revealed bronchogenic carcinoma. In addition a roentgen film was suggestive of a new lesion in the middle lobe of the right lung. They operated on the patient again, removing the right middle lobe and excising the hilar nodes, and the specimen failed to show any signs of neoplastic lesion. According to the report received from the Veterans Administration Hospital, the patient made a fairly good recovery and was discharged about six months later.

CASE 11.—G. K., a 53-year-old white man, was admitted to the hospital on March 5, 1954. He had been a heavy smoker for the past 36 years and had a history of cough, expectoration, nightsweats, and persistent fatigue for six months, with wheezing of about one year's duration. The sputum was positive for tubercle bacilli. Fig. 3*D*, a film taken on February 11, showed an area of density in the right lung, poorly defined above the posterior segment of the sixth rib. Within the density there appeared to be several small radiolucent areas. The roentgen diagnosis was tuberculosis of the lungs, far advanced, with possible neoplasm.

The patient was given antituberculosis drug therapy and a bronchoscopic study was done, which showed some secretion from the bronchus of the right upper lobe.

A chest film taken on July 19 [illegible] of the right [illegible] in comparison with the [illegible] earlier film

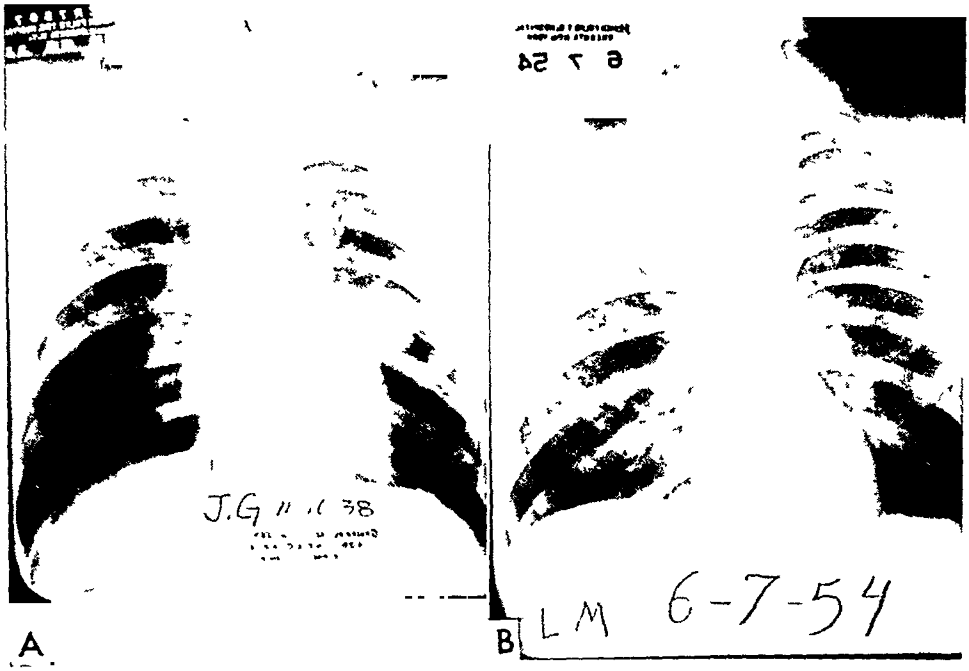

Fig. 4 (see text).

This definite clearing of the roentgen manifestation confirmed the diagnosis of tuberculosis. On August 16 a lobectomy was performed, with extraperiosteal pneumothorax, apicolysis and plombage. The only pathologic condition revealed was tuberculosis.

This case is presented to show the roentgen similarity between acute tuberculosis and carcinoma of the lung.

Case 12.—J. G., a 24-year-old white man, was admitted to the hospital on Oct. 3, 1938, with a history of cold, as well as blood-stained sputum present for a short time. Physical examination gave negative results. A roentgenogram (Fig. 4*A*) revealed a circumscribed shadow close to the hilum of the left lung.

Thoracotomy revealed a tumor in the upper part of the lower lobe. Histologically this proved to be sarcoma of the lung.

The patient died on July 20, 1940, in another hospital. The diagnosis was: Apparent metastasis to the right lung and the larynx.

Case 13.—L. M., a 39-year-old white man admitted to the hospital on July 1, 1954. He was a heavy smoker (one and one-half packs daily for the past twenty years). Two months prior to admission he had sharp pain in the right upper portion of the chest. This stayed localized for several days, eventually involving the whole body in a general malaise.

There were chills, fever, and nightsweats. The symptoms subsided. The patient worked for two weeks after which the symptoms reappeared. He was extremely weak and had a "cigarette" cough, with blood-streaked white secretion. The sputum was reported negative outside this hospital. Owing to the history of the patient, the symptoms and the blood-streaked sputum, he was sent to this sanatorium. Examination of the sputum here gave negative results for tubercle bacilli on several occasions. In the right lung (Fig. 4*B*, taken on June 7), extending in a rather wedge-shaped area from the region of the upper portion of the root to a point laterally below the clavicle, there were exceedingly dense changes, with little underlying detail. There was slight prominence of markings just below this, and the impression was gained that the upper portion of the root was more dense than normal. The diagnosis was pneumonitis, cause undetermined (differentiation between atypical pneumonia, tuberculosis and neoplasm.)

Bronchoscopic study on July 2, revealed bloody secretions coming from the upper lobe of the right lung. The retrograde lens showed a granular area in the posterior division of this lobe. The lesion was too high for biopsy.

On the assumption of neoplastic disease, thoracotomy was performed on July 8, revealing definite adhesions to the parietal pleura. It was possible only to remove a piece of tissue for biopsy, which showed lipoid pneumonia.

A second thoracotomy and lobectomy of the right upper lobe were done on July 21. The pathologic diagnosis of this specimen was abscess of the upper lobe of the right lung, with lipoid pneumonitis.

This case is presented because of the rarity of this condition, especially in an upper lobe, and the difficulty one may encounter in differentiation by roentgen ray and even by thoracotomy.

RESUMEN

El autor revisa la literatura sobre coexistencia de carcinoma broncógenico con tuberculosis pulmonar activa.

Se presentan algunos casos de esta coexistencia en los que el diagnóstico diferencial resultó difícil.

La tuberculosis pulmonar puede ser tratada y curada por la terapeutica medicamentosa aún en presencia de un carcinoma broncogénico.

Se cita también un caso de mesotelioma de la parte alta de la cavidad pleural derecha con un síndrome de Pencoast. Se citan dos casos de tuberculosis en los cuales la radiografía simulaba un carcinoma pero que resultaron ser solamente tuberculosis.

Por último se hace mención de un sarcoma del lóbulo superior izquierdo en un hombre de 24 años y de un caso de neumonia lipoidea simulando carcinoma y tuberculosis.

RIASSUNTO

L'Autore ha fatto una rassegna dei casi descritti nella Letteratura di carcinoma bronchiale associato a tubercolosi polmonare attiva. Fra i casi descritti ve ne sono alcuni in cui la diagnosi differenziale è stata molto difficile. La cura della tubercolosi può essere continuata con i farmaci addati anche in presenza del tumore.

Viene descritto un mesotelioma della cupola pleurica con sindrome di Pancoast; in altri due casi, oltre alla tubercolosi, vi erano segni radiologici di tumore coesistente; tuttavia anche questi segni si dimostrarono poi dovuti alla tubercolosi.

Viene riferito infine un caso di sarcoma del lobo superiore sinistro in un uomo di 24 anni, e una polmonite da lipoidi che simulava cancro e tuberculosi.

ZUSAMMENFASSUNG

Der Verfasser gibt einen Überblick über die Literatur über das gleichzeitige Bestehen eines Bronchialkrebses und aktiver Lungentuberkulose.

Es wird über Fälle berichtet, in denen beide Krankheiten bestanden und die Differentialdiagnose schwierig war.

Die Lungentuberkulose kann auch beim gleichzeitigen Bestehen eines Bronchialkarzinoms mit Arzneimitteln behandelt und zur Heilung gebracht werden.

Es wird über einen Fall von Mesotheliom des oberen Abschnittes der rechten Pleurahöhle mit Pancoastschem Syndrom berichtet.

Zwei Fälle von Tuberkulose werden beschrieben, bei denen die Röntgenuntersuchung ein gleichzeitig bestehendes Karzinom vermuten liess, tatsächlich jedoch nur Tuberkulose vorlag.

Ferner wird über ein Sarkom des linken Oberlappens bei einem 24jährigen Manne und über einen Fall von Lipoidpneumonie berichtet, die einer Kombination von Karzinom und Tuberkulose ähnelten.

RÉSUMÉ

L'auteur présente une revue de la littérature sur la co-existence du carcinome bronchogène et de la tuberculose pulmonaire active.

Des cas sont décrits dans lesquels se trouvent réunies ces deux affections, et où le diagnostic a été malaisé à poser.

La tuberculose pulmonaire peut être traitée et guérie médicalement, même en présence d'un carcinome bronchogène.

Un cas de mésothéliome de la partie supérieure de la cavité pleurale droite et de syndrome de Pancoast est présenté, ainsi que deux cas de tuberculose dans lesquels l'image radiologique simulait un carcinome.

Description d'un cas de sarcome du lobe supérieur gauche chez un homme de 24 ans, et d'un cas de pneumonie lipoïde simulant un carcinome et une tuberculose.

SUMARIO

O autor revê a literatura sôbre a coexistência de carcinoma broncogênico e tuberculose pulmonar ativa.

Casos são apresentados em que ambos, carcinoma broncogênico e tuberculose ativa ocorreram concomitântemente tornando o diagnóstico diferencial bastante dificil.

Tuberculose pulmonar pode ser tratada e curada com os métodos terapêuticos modernos mesmo na presença de carcinoma broncogênico.

O caso de um mesotelioma da parte superior da cavidade pleural direita e sindrome de Pancoast é apresentado.

Dois casos de tuberculose são apresentados nos quais o quadro radiológico simulava carcinoma e que posteriormente tiveram sua etiologia tuberculosa confirmada.

Um caso de sarcoma de lóbo superior esquerdo em um homem de 24 anos de idade e um caso de pneumonia lipoide, simulando carcinoma e tuberculose são apresentados.

> Hippocrates had a very keen, observant mind and an extraordinary amount of curiosity. He asked his patients all sorts of questions about their families, their habits, and their symptoms and made notes on the progress of their illnesses. He was the father of medical histories or records of patients and, unlike many of his immediate (or even later) followers in the art of healing, he recorded failures as well as successes. Many of Hippocrates' medical records contain descriptions of disease so accurate and so exact that we have no difficulty in making a diagnosis from his account. Hippocrates knew that patients who had fluid and air in their chests gave a splashing sound when they were shaken vigorously; he noted that patients with diseases of the chest often had clubbed fingers resembling drumsticks.
>
> —*Major*

Surgery of the Thyroid and Parathyroids

Carcinoma of the Thyroid

An Analysis of Sixty-Seven Cases

CLAUDE R. SWAIN, M.D., F.I.C.S.

LOS ANGELES, CALIFORNIA

CARCINOMA of the thyroid gland is a deadly disease and must be treated as such by the surgeon. It is evident from the many conservative approaches advocated by some surgeons in the past that this fact is neither widely accepted nor thoroughly appreciated. This report is based upon clinical material in this field with which I have been confronted over a period of fifteen years. The entire purpose of the study is to draw attention to the fact that carcinoma of the thyroid is a dangerous, unpredictable and often misleading disease.

In the fifteen-year interval from 1942 to 1957, 67 microscopically proved carcinomas of the thyroid were operatively treated at the Roos-Loos Medical Group. During this time approximately 1,500 operations were performed on the thyroid gland, the incidence of carcinoma being about 4 per cent.

A study of the patients revealed that age at onset of carcinoma of the thyroid varies widely. The youngest patient was 5 years old and the oldest 70. The average age was 42 years. Eleven patients were under 20 years of age (Table 1). Fifty-one patients, or 76 per cent, were female. It is my conviction that any disease that so frequently strikes young persons and persons in early middle life deserves serious attention and that any treatment should be directed toward cure, regardless of any deformity that may be the result of such treatment. It must be constantly kept in mind that those afflicted by this disease are, in the majority of instances, in the prime of life.

Carcinoma of the thyroid must be regarded in the same manner as is carcinoma of any other part of the human body.

The minimal operation for carcinoma of the thyroid is total thyroidectomy.

More aggressive surgical treatment is necessary if the spread of this disease is to be checked. This entails block dissection of the side affected and bilateral neck dissection if "positive" glands are present.

Radioactive iodine therapy is a useful adjunct in the management of this disease, especially when distant metastases are present or appear later.

Follow-up of this disease is a long-term proposition, and one hesitates ever to use the term "cure" in referring to carcinoma of the thyroid.

Of these 67 cases, 15 per cent presented clinical findings of true hyperthyroidism prior to operation. Despite all former

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theories, toxicity is certainly no guarantee that a thyroid neoplasm is benign.

Thyroid tumors vary widely in their pathologic features; this series is no exception (table 2). In 34 cases, or more than 50 per cent, there were papillary formations in either an adenocarcinoma or a follicular carcinoma. In 24 cases there was adenocarcinoma or follicular carcinoma without microscopic evidence of papillary formations. Hürthle cell carcinoma was observed in 5 cases, an incidence of 7.5 per cent. This is higher than previous reports have indicated. Vascular invasion was reported on microscopic study in 15 per cent of the cases studied. During the past ten years the literature has contained numerous reports stating that papillary carcinoma of the thyroid behaves in a more benign manner than does carcinoma of the thyroid in which papillary formations are not present. Purely on the basis of my experience from the cases presented here, this is not the case. It has been my experience that papillary carcinoma of the thyroid will metastasize to distant sites, invade locally and disable or kill the patient just as effectively as does any other carcinoma. As for vascular invasion frequently described in the literature as a "hopeless" sign, indicating a case in which distant metastasis via venous channels is almost certain, I disagree. Of the 11 cases in this study in which vascular invasion had occurred prior to operation, there was only 1 in which distant metastases have developed.

It is unfortunate that there are no symptoms of carcinoma of the thyroid. Malignancy may be present in a diffuse hypertrophy of the gland associated with hyperthyroidism. Carcinoma can be present in a multinodular goiter in a single nodule or may even present itself first as a metastatic lesion in the lateral neck. In twenty-six cases in this series, the initial finding was a solitary nodule. It is certainly recognized that a solitary nodule of the thyroid gland, especially in those under twenty years of age, is suspicious of carcinoma. However, when we consider that forty-one cases in this series did not present a single nodule but presented either as a multinodular goiter involving one or both lobes or as a diffuse infiltration of the entire gland, one is led to believe that all enlargements of the thyroid gland must be considered as carcinoma until proven otherwise. The true nature of thyroid neoplasms can only be determined by surgical removal and microscopic examination.

TABLE 1.—*Age and Sex*

Total no. of cases—67
Average age—42 years
11 patients under 20
Youngest age, 5 Oldest age, 79
Female patients—51 (76%)
11 patients, or about 15%, showed true hyperthyroidism preoperatively

TABLE 2.—*Pathologic Picture*

Type	*No. of cases*	%
Papillary		
Adenocarcinoma	27	50.7
Follicular carcinoma	7	
Adenocarcinoma (without papillary formations)	15	22.4
Follicular carcinoma (without papillary formations)	10	14.9
Hürthle cell carcinoma	5	7.5
Sclerosing carcinoma	2	3.0
Squamous cell carcinoma	1	1.5
Total	67	100

Vascular invasion present in 11 cases, or 15%.

It should be emphasized that clinical examination of the thyroid gland by palpation is at best unreliable. In over 26 per cent of the cases studied, nodules in the contralateral lobe not found by the examiner were discovered at the time of surgery. This unreliability extends to palpation in the lateral neck. In nearly 25 per cent of our cases, grossly involved lymph nodes were found at surgery which had gone undetected by the examining fingers. This fact alone should make one pause and reflect when one informs the patient that there is no evidence of spread of the disease.

The types of operation performed are shown in Table 4. With each passing year I have become more convinced that aggressive surgical treatment is necessary. In the light of present knowledge, lobectomy only is an inadequate operation for cancer of the thyroid. Those cases in which lobectomy was performed were either done in our earlier years or were cases in which the patient refused further surgery. Eighty-two per cent of my patients were subjected to total thyroidectomy with or without radical neck dissection. Total thyroidectomy is the minimal operation for carcinoma of the thyroid. In this study, 25 per cent of patients so operated showed carcinoma in the contralateral lobe. It is noteworthy that in seven cases, the operating surgeon performed a lobectomy and reported that the contralateral lobe was entirely normal to palpation. After a positive diagnosis of carcinoma had been established by histologic examination the patient was subjected to total thyroidectomy. In each instance a focus of carcinoma was found in the lobe previously deemed normal by the surgeon. Total thyroidectomy should, in our opinion, include the removal of the sternothyroid and sternothyoid muscles, extending laterally to the jugular vein and carotid artery and inferiorly to the retrosternal space. This wide dissection is necessary since lymph nodes often lie in the areolar tissue above the superior and inferior thyroid arteries and in the retrosternal space.

Since experience has taught us that carcinoma of the thyroid cannot be dealt with any differently than carcinoma of the breast or of the colon, we do not consider total thyroidectomy a curative procedure.

TABLE 3.—*Location of Tumor*

Location	*No. of cases*	*%*
One lobe	34	50.7
Both lobes	16	23.9
Isthmus chiefly	11	16.4
Diffuse infiltration of gland	6	9.0
Total	67	100

26 cases of the tumor presented clinically as a solitary nodule.

TABLE 4.—*Types of Operation Performed*

Operation	*No. of cases*	*%*
Lobectomy only	10	14.9
Isthmus and portion of each lobe	2	3.0
Total thyroidectomy only	13	19.4
Total thyroidectomy and block dissection, one side only	29	43.3
Total thyroidectomy and block dissection, both sides	13	19.4
Total	67	100

TABLE 5.—*Postoperative Follow-Up*

Time interval since operation	*No. of cases*	*%*
Under 5 years	25	37.3
Over 5 years	24	35.8
Over 10 years	10	14.9
Deceased	8	12.0
Total	67	100

Prophylactic block dissection of the neck on the side in which the tumor was situated was carried out in over 40 per cent of these cases. In 50 per cent of these, regional lymph nodes metastasis was found. In many instances no lymph nodes were palpable in the neck preoperatively. When lymph node metastasis was found, a second stage block dissection was carried out on the opposite side after an interval of two to three weeks. Unless obvious evidence of metastasis was noted during the dissection, the jugular vein and in some instances the sternomastoid muscles were preserved in order to lessen the deformity and mortality. In over 20 per cent of such cases, contralateral neck metastases were found. No operative mortality occurred from radical neck dissection.

Radioactive iodine (I^{131}) therapy has been disappointing in the past, primarily because of the low percentage of uptake theories, toxicity is certainly no guarantee that a thyroid neoplasm is benign.

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Deutsche Abteilung

Das Postcholecystektomie-Syndrom

(The Postcholecystectomy Syndrome)

E. KAISER, M.D.

ZÜRICH, SCHWEIZ

As a result of the reexamination of 220 patients who had undergone operations on the gallbladder not less than a year and a half earlier, the author presents a thoroughgoing analysis of the results. He emphasizes the importance of radiomanometric study during the operation, which, together with cholangiographic investigation, makes it a rare occurrence for stones to be left behind in either the cystic duct or the common bile duct. Overlooked stones and pathologic conditions in the bile ducts therefore command less concentrated attention from the surgeon than do hepatic changes that existed prior to operation, especially cholangitis, interstitial hepatitis and the various types of cirrhosis. Since these diseases are most frequently due to long-standing disease of the gallbladder, they should prove preventable, in many cases, by surgical intervention before complications occur. Absolute contraindications, such as extreme age, arteriosclerotic dementia and extraordinary obesity, are still valid except when the severity of the symptoms make operation unavoidable.

NACH gewissen Operationen treten gelegentlich Nachkrankheiten auf, die eine direkte Folge des Eingriffes sind und die mit dem operativ angegangenen Leiden keinen Zusammenhang haben. Der Prototyp einer solchen postoperativen Krankheit ist das Dumping-Syndrom nach grossen Magenresektionen. Weitere Beispiele sind die latente oder manifeste Ateminsuffizienz nach Lungenresektionen und die Oesophagitis nach Resektionen an Cardia und Speiseröhre mit nachfolgender Oesophagogastrostomie.

Man spricht heute auch von einem Postcholecystektomie-Syndrom und versteht darunter Beschwerden nach der Entfernung der Gallenblase, ohne dass damit zunächst über deren Aetiologie etwas ausgesagt wird. Für den Chirurgen ist aber eine aetiologische Aufspaltung dieses Syndroms eminent wichtig, vermittelt doch nur sie ihm einen tieferen Einblick in das Wesen der Störung und damit auch die Möglichkeit zu ihrer Vermeidung. Nach der Literatur soll das Syndrom in 5-40% aller Operierten vorhanden sein, so dass es zweifellos wichtig ist, sich mit ihm zu befassen.

Theoretisch kommen drei Ursachengruppen in Frage:

1. Vorbestandene Erkrankungen im Zusammenhang mit dem operierten Leiden, die durch die Operation nicht geheilt werden konnten.
2. Vorbestandene oder nachher aufgetretene Krankheiten ohne Zusammenhang mit dem operierten Leiden.

Aus der Chirurgischen Abteilung (Chefarzt: Dr. E. Kaiser) des Stadtspitals Waid, Zurich.

Submitted for publication May 1, 1958.

3. Direkte Operationsfolgen (Postcholecystektomie-Syndrom im engeren Sinne).

Wir haben versucht, uns ein Bild zu machen über die Haufigkeit und die Aetiologie der Beschwerden nach Cholecystektomie anhand von Nachuntersuchungen bei 220 Patienten, deren Gallenblasenoperation mindestens 1½ Jahre zurücklag.[1]

Die zur Beurteilung des Einzelfalles herangezogenen Unterlagen sind folgende:

a) Die Spitalkrankengeschichte inkl. Operationsbericht. Der letztere gibt in jedem Falle, zusätzlich zu der Beschreibung des Zustandes der Gallenblase und der Technik des Eingriffes, Auskunft über die Bakteriologie der A- und B-Galle, die Manometrie des Choledochus und die Cholangiographie durch eine via Cysticus in den Choledochus vorgeschobene geknöpfte Nadel, die Histologie der Leber anhand einer ausgiebigen Probeexzision, sowie über den Befund an Hiatus (Hernia diaphragmatica), Magen, Duodenum und Pancreas.

b) Ein Fragebogen, der an alle Patienten versandt wurde mit Fragen nach Allgemeinzustand, Koliken, Schmerzen, Fieber, Gelbsucht, anderen Erkrankungen, Diat und Nahrungsmittelempfindlichkeit anhand einer detaillierten Aufstellung.

c) Eigene Nachuntersuchungen, wenn ein Fall nicht absolut klar war. Etwa 30 Patienten wurden klinisch nochmals durchuntersucht, weitere 13 ambulant.

Bei der Auswertung der Resultate zeigten sich sofort zwei Schwierigkeiten:

1. Viele Patienten geben Fettempfindlichkeit (ohne Schmerzen!) als einzige Beschwerde an. Die Fettempfindlichkeit kann nun aber nicht ohne weiteres als charakteristisch für ein Leber-Gallenwegsleiden angeschuldigt werden, da wir bei der Untersuchung von 100 gesunden Menschen in 27% Fettempfindlichkeit angetroffen haben und in 6% von diesen auch noch Empfindlichkeit auf Süssigkeiten vorhanden war. Es ist immerhin möglich, dass ein Teil unserer Patienten sich aus dieser Gruppe der 27% Fettempfindlichen rekrutierte. Dem entspricht ja auch, dass sehr viele unserer Patienten angaben, schon vor der Operation, ja sogar seit ihrer Kindheit fettempfindlich zu sein und dass in ihrer Familie Fettempfindlichkeit erblich sei. Immerhin müssen Fermentinsuffizienz, dyspeptische und allergische Erscheinungen, Dyskinesie als psychogener oder bedingter Reflex nach abgelaufener Gallenwegserkrankung in Frage gezogen werden.

2. *Die Beurteilung der histologischen Präparate.*

Hier machte die Beurteilung der Fettinfiltration, resp. fettigen Degeneration Schwierigkeiten. Wir wissen, dass Fett als Transportfett in allen Richtungen von der Resorption zum Verbrauch oder ins Depot oder vom Depot zum Verbrauch immer die Leber zu passieren hat, so dass eine gewisse Fettinfiltration in den Leberzellen zum Normalen gehört. Wir konnen also eine Fetteinlagerung in den Leberzellen nur dann als pathologisch bezeichnen, wenn auch noch andere Zeichen einer Degeneration vorhanden sind.

Wir erhielten folgende Resultate:

I. Von den 220 nachuntersuchten Patienten (190 Frauen und 30 Mannern) fuhlen sich 165 gesund und sind zufrieden mit dem Erfolg der Operation.

II. Von diesen 165 Patienten essen 121 alles ohne jede Einschränkung. Die übrigen 44 fühlen sich subjektiv gesund, sind aber auf einige Speisen empfindlich (Fett, Rösti, Speck, Schokolade, Glace, Kaffee, blähende Gemüse, usw.) und [illegible] entsprechende Diät.

III. [illegible] 55 Patienten: [illegible]

---

[1] [illegible]

Schmerzen, 4 Blähungen, 1 Fieber, 1 Icterus.

Fast alle diese Patienten sind auch fettempfindlich (54), so dass insgesamt 98 von 220 Patienten über eine Fettempfindlichkeit klagen, deren Ursache im Einzelfall *abzuklären kaum möglich ist.*

Die genauere, meist klinisch durchgeführte Abklärung der 55 sich noch krank fühlenden Patienten ergab folgende Untergruppierungen:

a) Patienten, deren Beschwerden nicht *im Zusammenhang mit dem operierten* Gallenleider stehen (39 Patienten):

1.	Schwächezustand nach infektiöser Hepatitis innerhalb einer kleineren Epidemie	2
2.	Anacide Gastritis (einmal kombiniert mit schwerer Osteochondrose der Wirbelsäule, einmal mit Duodenitis und Duodenaldivertikel)	2
3.	Eosinophile Antrumgastritis und eosinophiler Antrumpolyp	1
4.	Dyspeptische Störung bei Diabetes gravis	3
5.	Zu enger Anus praeter (wegen rezidivierenden Darmprolapses von anderer Seite angelegt)	1
6.	Schmerz der Coecalgegend nach Appendicitis	1
7.	Neigung zu Gastroenteritis (als Kolik bezeichnet)	1
8.	Dyspepsie bei enormer Adipositas	1
9.	Diabetes (+ "Herzasthma" des Mannes)	1
10.	Chronische Nephritis	1
11.	Chronische Polyarthritis	1
12.	Spastische Obstipation	1
13.	Irreponible Femoralhernie	1
14.	Migräne	2
15.	Menière	2
16.	Asthma bronchiale + Taenia saginata	1
17.	Herzleiden	2
18.	Thrombose	1
19.	Essentielle Hypotonie	1
20.	Osteochondrose der Lendenwirbelsäule (einmal + Analekzem)	2
21.	Unabklärbarer Schmerz unter dem Xiphoid	1
22.	Allgemeine Müdigkeit, Nervenschmerzen, Depressionen, neurotische Symptome, klimakterische Beschwerden (1 davon in Depression [vorbestanden])	10
		39

b) Restbeschwerden im Zusammenhang mit dem operativ angegangenen Leiden (16 Patienten):

1.	Uebersehenes *Pancreaskarzinom* (zunächst als Papillitis operiert, 1 Jahr später Probelaparotomie: inoperables Pancreaskarzinom; unterdessen an Metastasen gestorben)	1
2.	Gallenblasenkarzinom; unterdessen an Metastasen gestorben	1
3.	Cholangitische Symptome (1 × mit pankreatitischen)	2
4.	Cholangitische Cirrhose (gestorben)	1
5.	Papillitis stenosans bei der Operation übersehen, jetzt nachoperiert und beschwerdefrei	1
6.	*Unbestimmte Schmerzen in der Le*bergegend und Fettempfindlichkeit	8
7.	Kleine Narbenhernie	1
8.	Schmerzen und hie und da eine Kolik, wahrscheinlich infolge Dystonie der Gallenwege	1
		16

IV. Von den 36 Papillitiden dieser Serie *fühlen sich 15 (12 Frauen und 3 Männer)* ganz gesund und essen alles. Unter diesen sind auch ganz schwere Formen. 5 fühlen sich gesund, essen aber noch mit Einschränkung.

16 Frauen fühlen sich noch nicht gesund. 10 davon leiden aber an anderen Erkrankungen ohne Zusammenhang mit dem Gallenwegssystem. Die übrigen 6 klagen über Koliken (3), Schmerzen (6), Fettempfindlichkeit (4), Fieberschübe (1), Blähungen und Aufstossen (2). Nur bei einer dieser Frauen konnte die Diagnose mit Sicherheit auf Cholangitis und Pancreatitis chronica gestellt werden. Von diesen 6 Patientinnen sind 3 supraduodenal anastomosiert worden, 2 transduodenal sphinkterotomiert, eine Papille wurde gedehnt. Die kleinen Zahlen erlauben selbstverständlich keine Stellungnahme für oder gegen die einzelnen Verfahren.

V. *Bakteriologie.*[2] In allen Fällen wurden A- und B-Galle getrennt bakteriologisch untersucht. Es wurden im ganzen 60 positive Befunde erhoben, die sich wie folgt verteilen:

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[2] Hygieneinstitut der Universitat Zurich, Vorsteher Prof. Mooser.

49mal war die A-Galle infiziert, mit:

Escherichia coli	17mal
Escherichia coli + Enterokokken	4mal
Enterokokken	6mal
Enterokokken + Subtilis	3mal
Dissoziierten Staphylokokken	7mal
Dissoziierten Staphylokokken + Streptokokkus non haemolyticus	2mal
Streptokokkus non haemolyticus	8mal
Proteus vulgaris	2mal

40mal stimmten die Befunde in der A-Galle mit denen der B-Galle überein. 6mal war die B-Galle steril, während die A-Galle infiziert war. In 3 Fallen von Papillitis war die Gallenblase fruher entfernt worden.

In 11 weiteren Fallen war die A-Galle steril, in der B-Galle fanden sich Escherichia coli, Enterokokken, Staphylokokken, bzw. Streptokokkus non haemolyticus.

Von den 49 Patienten mit infizierter A-Galle sind 29 gesund (8 davon hatten eine Papillitis stenosans), 8 mit Einhaltung von Diat gesund (1 Papillitis). 7 Patienten sind krank aus Grunden, die nicht mit der Gallenblasenoperation zusammenhangen und 5 zeigen noch Symptome einer Gallenwegserkrankung (3 davon Papillitiden). Bei 11 von den 12 Patienten aus der Gruppe der Papillitis lagen gleichzeitig schwere Leberveranderungen vor. Von den ubrigen 37 Operierten dieser Serie hatten 17 ebenfalls schwere Leberveranderungen, von denen sich heute 10 gesund fuhlen, 2 weitere gesund, wenn sie Diat halten, wahrend 1 aus anderen Grunden krank sind und 1 schliesslich an cholangitischer Cirrhose gestorben ist

Die 11 Patientinnen, bei denen wir nur aus der Gallenblase Bakterien gewannen, sind gesund, 3 allerdings nur, wenn sie fette Speisen meiden

VI *Pathologische Anatomie*. Bei 69 Patienten erhoben wir folgende pathologische Leberbefunde:

Chronische Cholangitis	20
Cholangitische Cirrhose	5
Chronische interstitielle Hepatitis	24
Schwere Cholostase + Verfettung	4
Fettcirrhose	2
Lebersklerose	4
Schwerer Parenchymschaden (+ Sklerose)	6
Insuläre Cirrhose	2
Haemosiderose bei Kugelzellanaemie	1
Metastasen bei Gallenblasenkarzinom	1
	69

Diese Befunde verteilen sich auf die einzelnen Patientenkategorien wie folgt:

1. Von den 16 Patienten, deren Beschwerden auf ein restierendes Gallenleiden hinweisen, hatten:

Chronische Cholangitis	5
Cholangitische Cirrhose (1 gestorben)	3
Chronische interstitielle Hepatitis	3
Lebersklerose	1
Schwerer Parenchymschaden und intralobulare Sklerose	1
Metastasen von Gallenblasenkarzinom (gestorben)	1
	14

Die Patientin, die eine ubersehene Papillitis hatte, war ohne pathologischen Leberbefund. Beim letzten Patienten dieser Kategorie handelte es sich um das ubersehene Pancreaskarzinom.

2. Von 39 Patienten, deren jetzige Beschwerden sicher nicht mit den Gallenwegen zusammenhangen, hatten pathologische Leberbefunde:

Chronische Cholangitis	1
Cholangitische Cirrhose	1
Interstitielle Hepatitis	5
Fettcirrhose	1
Lebersklerose	1
Schwerer Parenchymschaden	[illegible]
Haemosiderose bei Kugelzellanaemie	1
	11

3. Von den 19 Patienten, die subjectiv geheilt sind, aber fettempfindlich blieben, wiesen intra operationem pathologische Leberbefunde auf:

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

4. Garkeine Beschwerden mehr haben 31 Patienten mit pathologischen Leberbefunden intra operationem. Diese 31 Fälle wiesen bei der Operation folgende Leberbefunde auf:

Chronische Cholangitis	11
Cholangitische Cirrhose	1
Hepatitis interstitialis	13
Cholostase + Verfettung	2
Fettcirrhose	1
Lebersklerose	1
Insuläre Cirrhose	2
	31

5. Von den 36 Patienten mit Papillitis stenosans wiesen auf:

a) Von den 15 klinisch geheilten:

Interstitielle Hepatitis	5
Cholangitis chronica	1
	6

b) Von den 15 Patienten, die sich zwar gesund fühlen, aber fettempfindlich sind oder an einer anderen Erkrankung leiden:

Chronische interstitielle Hepatitis	2
Cholangitische Cirrhose	1
Fettcirrhose	1
Parenchymschaden	2
Fettige Degeneration + Cholostase	1
	7

c) Von den 6 noch sicher kranken Patienten:

Cholangitis interstitialis	3
Chronische interstitielle Hepatitis	1
Schweren Parenchymschaden	1
	5

Diesen 69 Patienten von 220 = 32% mit pathologischen Leberbefunden stehen bei Probelaparotomien wegen unklarer Oberbauchbeschwerden, ohne Befund an den Nachbarorganen, nur 10% pathologische Leberbefunde gegenüber, die zudem möglicherweise für die geklagten Beschwerden massgebend waren.

VII. Patienten mit Steinen im Choledochus.

38 Patienten waren Choledochussteinträger: 20 fühlen sich gesund, 9 davon sind operier Papillitiden. 8 sind gesund mit Einschränkung (d.h. fettempfindlich), 3 davon hatten eine Papillitis. 10 fühlen sich nicht gesund, 7 davon sind Papillitiden (allerdings sind 3 dieser 10 krank aus Gründen, die nicht mit der Leber oder den Gallenwegen in Zusammenhang stehen, davon 2 Papillitiden). Von den 3 Nicht-Papillitiden dieser letzten Gruppe hatte eine insuläre Cirrhose + Escherichia coli in der A-Galle, die andere Escherichia coli in der A- und B-Galle, die letzte ist herzleidend, also krank aus "gallenfremden" Gründen.

Bei den Patienten mit Steinen im Choledochus wurden schwere Leberbefunde 19mal erhoben, 10 davon hatten gleichzeitig eine Papillitis. Weitere 8 Patienten dieser Kategorie ohne schwere Leberbefunde hatten bakteriologisch eine Cholangitis.

Bei einer *choledochusdrainierten* Frau haben wir einen Papillenstein übersehen. Er konnte aufgelöst werden.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNG

Wir haben 220 *gallenblasenoperierte* Patienten nachuntersucht, deren Operation mindestens 1½ Jahre zurücklag. Ihr heutiger Gesundheitszustand wurde mit dem intraoperativen Status verglichen, *ganz besonders mit dem bakteriologischen* Befund der A- and B-Galle, dem pathologisch-histologischen der Leber und den Verhältnissen am Choledochus (Steine, Papillitis stenosans). Diese Untersuchungen führten zu folgenden Feststellungen:

1. Von 200 gallenblasenoperierten Patienten fühlten sich, 1½ bis 3 Jahre nach der Operation, 165 (75%) gesund, wobei 44 (20%) ihre Fettempfindlichkeit nicht als Krankheit empfinden. 121 (55%) essen alles.

2. 55 Patienten (25%) fühlen sich noch krank, 54 sind auch fettempfindlich. 39 (17,7%) leiden an Erkrankungen, die nichts mit dem operierten Leiden zu tun haben und 16 (7,3%) an Restbeschwerden

in Zusammenhang mit dem angegangenen Leiden. Von diesen letzteren hatten 13 einen schweren Leberbefund, bei einer weiteren Patientin handelte es sich um ein Gallenblasenkarzinom mit Lebermetastasen. Bei der 15. haben wir eine Papillitis stenosans übersehen und später nachoperiert, worauf die Patientin gesund wurde. Der 16. Patient hatte ein übersehenes Pancreaskarzinom und starb später an Lebermetastasen.

3. Bei 90 Patienten (41%) wurde intra operationem entweder eine schwere pathologische Leberveränderung (69) oder ein bakteriologischer Befund in der A-Galle (49) erhoben. 28mal lag eine Kombination beider Befunde vor.

4. Die hauptsächlichten Erreger sind: Escherichia coli, Enterokokken, Streptokokken und Staphylokokken. Die wichtigsten Leberveränderungen sind: Die Cholangitis chronica, die Hepatitis interstitialis und die verschiedenen Cirrhoseformen.

5. Die Zahl von nur 16 (7,3%) von 220 Patienten mit Restbeschwerden (sofern man die Fettempfindlichkeit nicht als solche betrachtet), die mit dem Gallenleiden in Zusammenhang stehen, zeigt, dass auch schwerste Infektionen und Leberveränderungen, wie z.B. bei Papillitis, Choledochussteinen, Cholangitis etc., klinisch in einem grossen Prozentsatz ausheilen können.

6. Zurückgelassene, vergessene Steine im Cysticus oder Choledochus kommen heute, dank der intraoperativen Radiomanometrie, praktisch kaum mehr vor. Diese Tatsache ist hauptsächlich daran schuld, dass die postoperativen Resultate besser sind als früher. Das Vorhandensein von Choledochussteinen gibt aber andrerseits einen Hinweis darauf, dass es sich um einen schweren Fall handelt, der eine genaue intraoperative Abklärung nach allen Richtungen verlangt.

7. Die Ursachen der Beschwerden nach Cholecystektomie haben sich, sofern sie überhaupt in ursächlichem Zusammenhang mit dem Gallenleiden stehen, infolge der Cholangiographie und der Manometrie der Gallenwege verlagert. Es sind nicht mehr die übersehenen Steine oder pathologische Veränderungen an den Gallengängen, die im Vordergrund stehen, sondern die vor der Operation bestandenen Veränderungen an der Leber, ganz besonders die Cholangitis, die interstitielle Hepatitis und die Cirrhosen in ihren verschiedensten Formen. Da es sich bei diesen Erkrankungen meist um Folgen eines lange bestehenden Gallenleidens handelt, sollte ein Grossteil davon durch die Frühoperation vermieden werden können. Das soll selbstverständlich nicht heissen, dass jeder Gallenstein operiert werden soll. Absolute Kontraindikationen, wie Herzdekompensation, frischer Infarkt, dekompensiertes Nierenleiden und relative Gegenanzeigen, wie hohes Alter, arteriosklerotische Demenz, aussergewöhnliche Adipositas behalten ihre Gültigkeit auch heute noch, vorausgesetzt, dass der Eingriff wegen der Beschwerden nicht unvermeidbar ist. Ganz generell kann aber aus diesen Untersuchungen gefolgert werden, dass die Resultate der Gallenblasenoperationen durch die Frühoperation, d.h. vor dem Auftreten von Komplikationen, weiter verbessert werden können.

SUMMARY AND CONCLUSIONS

Two hundred and twenty patients who had undergone operation on the gallbladder not less than a year and a half earlier were re-examined. Their present condition was compared with that observed at operation, particularly with regard to the bacteriologic picture in the A-bile and the B-bile, to the histopathologic aspect of the liver, and to the condition of the common bile duct (stones, stenosing papillitis). These investigations led to the following statements:

1. Of 220 patients, 165 (75 per cent) had felt well for one and one-half to three years after the operation. Forty-four (20 per cent) did not consider their sensitivity to fat a disease. One hundred and twenty-one (55 per cent) ate anything.

2. Fifty-five patients (25 per cent) still feel sick, and 54 are, in addition, sensitive to fat. Thirty-nine (17.7 per cent) suffer from diseases not related to the condition for which they were operated upon, and 16 (7.3 per cent) have residual discomfort associated with the treated condition. Thirteen of the latter group showed serious liver conditions, and 1 additional patient, a woman, suffered from a carcinoma of the gallbladder with metastases to the liver. In the fifteenth patient stenosing papillitis was overlooked and treated surgically later, which resulted in recovery of the patient. The sixteenth patient, a man, had carcinoma of the pancreas, which was not recognized. He died later of metastases to the liver.

3. In 90 patients (41 per cent) with severe pathologic hepatic changes (69) all bacteriologic abnormalities in the A-bile (49) were discovered at operation. A combination of the two conditions occurred 28 times.

4. The main microorganisms are Escherichia coli, enterococci, streptococci and staphylococci. The most important hepatic changes are chronic cholangitis, interstitial hepatitis and the various types of cirrhosis.

5. The fact that only 16 of 220 patients (7.3 per cent) had residual complaints connected with the cholecystic disease (if one disregards fat sensitivity as such) indicates that even the most severe infections and hepatic changes, such as papillitis, common bile stones or cholangitis, may be clinically cured in a high percentage of cases.

6. Thanks to radiomanometric examinations during operation, it seldom happens nowadays that stones are left behind in the cystic duct or the common bile duct. This explains, mainly, the improvement of postoperative results as compared with those obtained earlier. On the other hand, the presence of stones in the common bile duct indicates that one is dealing with a serious condition that requires thorough investigation in all directions during the operation.

7. As a result of cholangiographic study and of manometric examination of the bile paths, a change in evaluation of the causes of complaints following cholecystectomy has evolved in those cases in which the complaints have any etiologic relation with the cholecystic disease. The overlooked stones or the pathologic changes in the bile ducts are no longer in the foreground of consideration; rather, attention is centered on the hepatic changes that existed prior to the operation, especially cholangitis, interstitial hepatitis and the various types of cirrhosis. Since these diseases are most frequently the results of cholecystic disease of long duration, a great number of them should be preventable by early surgical intervention. This, of course, does not mean that every gallstone indicates operation. Absolute contraindications, such as cardiac decompensation, recent infarction and decompensated renal disease, and relative contraindications, such as old age, arteriosclerotic dementia and extraordinary obesity, are still valid today, except when surgical intervention cannot be avoided because of the severity of the symptoms. Generally these investigations permit the conclusion that the results of cholecystic surgical treatment may be further improved by early intervention, before complications occur.

Sezione in Italiano

Esperienze Cliniche con il Micoren, Um Nuovo Farmaco Analettico

(Micoren: A New Analeptic Drug)

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Micoren, a new analeptic drug, was efficacious in 436 cases in which the patients were subjected to surgical operations with anesthesia of various types. In 12 other cases it was used, also with satisfactory results, in combination with morphine for the control of postoperative pain.

In appraisal of the analeptic effect of Micoren, data of the utmost importance were obtained, both in determining the depth of anesthesia primarily and after the use of Micoren and in establishing the degree of hypoxia present.

I NARCOTICI producono sul sistema nervoso centrale una serie di modificazioni che interessano l'attività sensoriale (blocco degli impulsi afferenti), l'attività motoria (blocco degli impulsi efferenti), l'attività riflessa (blocco dei riflessi) e l'attività mentale (produzione di sonno).

I narcotici producono cioé una condizione definita 'depressione del sistema nervoso centrale' che é più o meno grave a seconda della dose del narcotico, e nella quale il centro respiratorio é uno dei primi a diventare depresso.

La causa di questa depressione é il disturbo dei processi metabolici intra-cellulari, che, per tornare normali, presuppongono la rimozione del tossico e l'assenza di lesioni anatomiche irreversibili.

Nel caso dei narcotici volatili la rimozione avviene mediante la respirazione, cioé lo stabilirsi di un gradiente di pressione tra le cellule, il sangue, l'aria alveolare e quella atmosferica, mentre nel caso dei narcotici non-volatili la possibilità di ripresa é unicamente dovuta alla capacità dell'organismo di inattivare o eliminare il farmaco.

Attualmente esistono due tendenze terapeutiche per il trattamento del superdosaggio di narcotici. La prima sostiene che, [illegible] nel tempo dovuto, la droga si elimina da sola a patto che la circolazione sia sostenuta e la ventilazione adeguatamente mantenuta (terapia conservativa).

La seconda invece propone l'uso di farmaci stimolanti il sistema nervoso centrale, cioé gli analettici.

Va detto però che la maggioranza delle opinioni espresse considera questi [illegible] inutili ed anche [illegible].

[illegible]

essere notevolmente inferiore al 10%, cioé alla media dei casi analoghi trattati con analettici.

Locket and Angus[2] affermano addirittura che con queste sostanze il medico non tratta l'intossicazione barbiturica, ma misura la tolleranza dell'organismo umano ai convulsivanti, e secondo *Filomeni,*[4] l'imponente lavoro compiuto in un trentennio da chimici e farmacologi ha dato risultati notevoli dal punto di vista teorico, rivelando i repporti esistenti fra struttura chimica ed azione analettica, ma risultati molto meno importanti dal punto di vista pratico, perché nessuno dei numerossisimi composti sintetizzati finora é risultato più vantaggioso dei due preparati fondamentali, Niketamide e Metrazol.

In riassunto le critiche mosse agli analettici sono le seguenti:

1. Il soggetto depresso da un narcotico e successivamente trattato con un analettico deve provvedere ad eliminare due tossici invece di uno solo.
2. Dopo il periodo di stimolazione segue sempre un periodo di depressione.
3. Con gli analettici si viene ad aumentare il consumo di Ossigeno in un paziente depresso, e quindi in ipossia.
4. Esiste una notevole intensità e varietà di fenomeni secondari (nausea, vomito, tremori, convulsioni, iper-tensione arteriosa) dovuti alla molteplicità dei punti di attacco degli analettici.
5. Ove maggiore é la necessità di stimolare (depressioni gravi), minore é l'efficacia degli analettici e maggiore la probabilità di convulsioni.
6. La durata d'azione degli analettici é sempre più breve di quella dei narcotici, risultandone quindi una situazione molto simile a quella della Prostigmina nei confronti del Curaro.
7. Gli effetti stimolanti sono incostanti e le reazioni collaterali imprevedibili.

Prese in considerazione le principali critiche mosse agli analettici, bisogna anche riconoscere che esistono diversi errori di valutazione nei rapporti clinici (Eckenoff et al[5]), che si possono così riassumere:

1. Insufficiente chiarificazione nei riguardi della funzionalità renale.
2. Insufficiente chiarificazione nei riguardi delle condizioni anatomo-patologiche degli organi (l'edema cerebrale nell'intossicato da barbiturici é, ad esempio, quasi sempre seguito dalla morte).
3. Insufficiente chiarificazione nei riguardi dell'intervallo tra l'inizio della somministrazione dell'analettico e l'inizio del trattamento completo (ossigeno-terapia, lavatura gastrica, antibiotici, ecc.).
4. Azione sinergistica tra più narcotici.
5. Super-stimolazione con gli analettici.

Oltre a questo noi desideriamo fare osservare due altri aspetti del problema:

1. La valutazione clinica di un analettico in base alle modificazioni indotte sul respiro, sul polso e sulla pressione arteriosa é insufficiente. Le modificazioni della respirazione sopratutto debbono essere valutate con cautela.

L'omeostasi respiratoria, in condizioni normali, può essere infatti definita in termini di ventilazione alveolare (Tenney[6]), essendo la vetilazione alveolare uguale al volume espirato meno la ventilazione dello spazio morto.

La tensione di CO_2 nell'aria alveolare varia in ragione inversa della ventilazione alveolare e rappresenta il segno più sicuro degli effettivi cambiamenti della respirazione.

Data questa situazione é difficile trarre delle conclusioni da dei dati che indicano solo il cambiamento nel volume/minuto e nella frequenza sotto una droga.

Occasionalmente quello che può sembrare un effetto stimolante é proprio l'opposto, perché se la frequenza é aumentata proporzionalmente più del volume espirato, soltanto lo spazio morto é più ventilato.

E' anche meno conosciuto che molte sostanze studiate per la loro influenza sul sistema respiratorio hanno anche significativi effetti sul metabolismo e possono modificare il consumo di ossigeno e l'eliminazione di CO_2.

Se i meccanismi di regolazione della respirazione funzionano adeguatamente, la ventilazione alveolare si accomoda ad un nuovo livello in cui la tensione di CO_2 é immutata e quindi, per definizione, non vi é né stimolazione, né depressione della respirazione. Chi registra i fenomeni esterni della respirazione osserverà tuttavia profondi cambiamenti nel volume/minuto e nella frequenza respiratoria, ma la tensione di CO_2 nell'aria alveolare e nel sangue arterioso rimane invariata.

Nelle nostre valutazioni abbiamo dato la massima importanza all'elettroencefalogramma, che é un mezzo di indagine preciso ed immediato, e che offre un quadro accurato del metabolismo cerebrale.

2. Depressione del Sistema Nervoso Centrale significa invariabilmente ipossia, ed il grado di questa ipossia é un fattore fondamentale per la possibilità di guarigione, sopratutto quando il sistema nervoso centrale é stimolato con gli analetici. e quindi il suo consumo di ossigeno aumenta.

Questa condizione é importante da conoscersi per evitare le convulsioni da analettici.

Clinicamente si ammette (Hoflehner[7]) che una condizione di ipossia silente sia ben tollerata senza segni manifesti di danno cerebrale, se un precoce trattamento é istituito. L'ischemia totale che duri più di 3-4 minuti é sempre fatale nel paziente chirurgico.

L'esatta valutazione della gravità dell'ipossia cerebrale nel paziente chirurgico puó essere difficile e sopratutto non immediata.

Anche in questo caso l'elettroencefalografia é di grande aiuto. e fornisce dei dati di notevole valore prognostico.

Il rallentamento della frequenza dell'elettroencefalogramma é il cambiamento caratteristico associato con l'ipossia. Talora esso é preceduto da un iniziale aumento della frequenza e dell'ampiezza, che si accompagna a convulsioni generalizzate ed a gasping respiration.

Man mano che l'ipossia progredisce la frequenza diviene minore e l'ampiezza maggiore, finché. 18-20 secondi dopo completa cessazione della circolazione, l'elettroencefalogramma diventa una linea retta (Sugar and Gerard:[8] Gibbs et al;[9] Bellville et al[10]).

I cambiamenti descritti sopra possono essere considerati tipici dell'ipossia, ma diverse variazioni debbono essere aspettate.

In genere la prognosi (Bellville and Howland[11]) é buona se l'elettroencefalogramma non é diventato piatto dopo ipossia, o, se é diventato piatto, la prognosi può ancora essere talora buona se l'attività veloce ritorna entro un'ora.

La comparsa di un 'file pattern', cioé di una linea piatta con superimposta un'attività (5 microvolts) veloce (50 cieli), porta una grave prognosi.

E' evidente che un analettico efficace e sicuro é di grande utilità in un reparto operatorio indaffarato ed in una recovery anti-narcotica, il Micoren, che é una miscela in parti uguali di dimetil. amide dell'acido N. crotonil-alfa-etilamino-butirrico e di dimetil-amide dell'acido N. crotonil. alfa. propilamino, butirrico (Kunze and Mechelke;[12] Steinhardt;[13] Benstz;[14, 15] Izqueiro and Staritta;[16] Rubiralta;[17] Leimdorfer;[18] Carvalho and Flora;[19] Echeveste-Ortega;[20] Hanke;[21] Potier;[22] Buhlmann and Behn;[23] Rau;[24] Cattaneo[25]).

Dal punto di vista farmacologico il Micoren presenta alcune caratteristiche nuove rispetto agli analettici già noti:

1. Antagonismo non specifico (azione multifocale sul sistema nervoso centrale);
2. Stimolazione del centro respiratorio anche nell'ipossia ipassica;
3. Stimolazione del centro respiratorio anche nella depressione da morfina e simili;
4. Assenza di effetti convulsivanti nel paziente sveglio;
5. Bassa tossicità: la LD_{50} nel ratto é di 525 mgm/Kg di peso corporeo, rispetto ai 60 mgm/Kg del Metrazol, ed ai 200 mgm/Kg della Niketamide.

Nel nostro reparto il Micoren é stato usato in 436 pazienti chirurgici nei quali l'anestesia era stata condotta con Etere/Protossido d'Azoto, oppure con Ciclopropano, oppure con Thiopental, oppure con Idrossidione.

La dose media di Micoren fu di 200 mgm, iniettati velocemente endovena.

In ogni caso fu data la massima importanza alle modificazioni dell'elettroencefalogramma, osservando contemporaneamente il comportamento del polso, della pressione arteriosa, del respiro, dei riflessi, e della coscienza.

In questi pazienti noi osservammo:

1. L'elettroencefalogramma ha subito delle modificazioni consistenti entro 60 secondi dall'iniezione di Micoren, accompagnate da ritorno della coscienza e dei riflessi. In 16 pazienti (3.9% dei casi) fu necessario ripetere una dose di 200 mgm di Micoren per avere il ritorno della coscienza.
2. L'effetto stimolante é stato manifesto indipendentemente dal tipo di narcotico usato.
3. Nell'animale (coniglio) il Micoren é stato efficace anche nell'ipossia ipossica.
4. Dodici pazienti furono trattati con dosi di morfina tre volte superiori a quelle usuali per controllare il dolore post-operatorio. *Ogni 10 mgm di Morfina erano iniettati insieme con 100 mgm di Micoren:* si ottenne un buon controllo del dolore senza manifesti effetti collaterali da morfina.

Questo tipo di antagonismo merita però ulteriore studio.

5. Il Micoren é praticamente senza effetti sul polso e sulla pressione arteriosa. Il polso rimane invariato e lo stesso comportamento ha la pressione arteriosa: raramente si é osservato un aumento di 5-10 mm/Hg contemporaneamente al ritorno della coscienza.
6. La respirazione é stata sempre modificata dal Micoren, ed il suo cambiamento é il primo segno a comparire. La profondità ed il volume Tidal sono aumentati sensibilmente in ogni caso, mentre la frequenza é rimasta immutata oppure é aumentata di poco.
7. Non abbiamo mai osservato vomito o nausea. In due casi abdiamo notato tremori alle mani ed alle braccia, scomparsi spontaneamente dopo pochi minuti.

In un altro caso il Micoren ha provocato convulsioni generalizzate, che sono state prontamente controllate con 125 mgm di Thiopental, iniettati endovena.

Il paziente era un uomo di 27 anni che aveva avuto una appendicectomia sotto Thiopental/Protossido d'Azoto/Etere/Ossigeno.

Alla fine dell'intervento l'ellettroencefalogramma rivelava un piano di anestesia assai leggero (livello II); per errore furono iniettati circa 500 mgm di Micoren, e dopo 30 secondi si manifestarono convulsioni generalizzate.

Un curioso fenomeno che osservammo nel 40% circa dei casi, e soltanto quando il Micoren era iniettato ad un livello di anestesia superficiale, é l'insorgere di sternuti, spesso violenti, che si prolungavano per 4-5 minuti.

Verosimilmente questo fenomeno é da attribuire alla natura parasimpaticomimetica della droga, anche se il comportamento della pupilla non ha provato questa proprietà del Micoren in ogni caso.

8. Le dosi della droga debbono essere generose ed iniettate possibilmente in una sola volta, perché le dosi frazionate sono state spesso inefficaci.

Data la bassa tossicità le convulsioni sono improbabili a manifestrasi, ed in questa eventualità i barbiturici sono capaci di un rapido controllo.

9. Dalla nostra esperienza abbiamo guadagnato l'impressione che il Micoren sia un antinarcotico versatile ed efficace, con tossiciyà bassa e modeste reazioni collaterali.

RIASSUNTO

Il Micoren si é dimostrato efficace in 436 pazienti che subirono l'intervento chirurgico sotto anestesia di vario genere.

In dodici altri pazienti il Micoren fu usato in associazione alla morfina per il controllo del dolore post-operatorio, con risultati soddisfacenti.

Nel valutare gli effetti analettici é stata data la massima importanza ai rilievi elettroencefalografici, sia nel determinare la profondità dell'anestesia prima e dopo Micoren, che nello stabilire la gravità dell'ipossia.

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Section en Francais

Quelques Aspects du Carcinome du Rectum

(Carcinoma of the Rectum)

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Analysis and observation of 136 patients with rectal carcinoma revealed that 52 were male and 84 were female; that the incidence of rectal carcinoma was highest between the ages of 45 and 55, and that the interval between the appearance of the first symptoms and the first consultation with a physician varied from two months to three years, with an average of nine and one-half months. In 84 per cent the tumor occurred above the terminal 8 cm. of the rectum. Forty-four per cent were inoperable. In 84 per cent of the cases amputation was performed; in 14.5 per cent, resection only. The immediate mortality rate (within one month after the operation) was 16 per cent. Observation of the long-range results indicated that this rate reached its peak level in the course of the first postoperative year (15.6 per cent). Anatomopathologic studies indicated that adenocarcinoma was the predominant type.

The treatment of choice is still resection with preservation of the sphincter, but radical operation is often impossible, because of insurmountable technical difficulties; consequently, the final results in many cases leave much to be desired.

Au cours de huit dernières années de mon activité à l'Institut Oncologique de la Faculté de Médecine, j'ai opéré ou observé dans mon Service chirurgical 136 malades atteints de cancer du rectum. Le nombre des cas operés ou simplement soignés nous permet de passer en revue critique quelques aspects particuliers du cancer du rectum.

Ce qui frappe de prime abord c'est la discordance de notre statistique personnelle en ce qui concerne le sexe avec celle de divers auteurs. Ainsi notre matériel clinique montre que sur 52 hommes il y a 75 femmes (resp. 84 cas sexe feminin y comptant 9 malades atteintes de cancer secondaire venant des organes génitaux). Contrairement à ma statistique, chez d'autres auteurs c'est le sexe masculin qui a le privilège de majorité dans cette affection maligne du rectum (D'Allaines, Duces, Bacon, Haltborn).

Nous n'avons trouvé qu'en partie l'explication de cette discordance dans le fait que neuf sujets de sexe feminin, dont les lésions du rectum étaient la conséquence d'une tumeur primitive des organes génitaux, ont été aussi englobés dans notre statistique Cependant même sans compter ces lésions secondaires par propagation les taux respectifs des cas de cancer du rectum ne changent guère dans notre statistique réelle, où la majoritè des affections mali-

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gnes du rectum reste en faveur du sexe féminin.

En outre nous croyons pouvoir expliquer le grand pourcentage de femmes par le fait qu'elles gravitent de plus en plus vers notre Service, qui a le caractère eminemment oncologique.

En réalité la vraie raison de cette hausse en faveur de femmes reste encore à elucider.

Il y a aussi quelques statistiques où à l'examplе de notre statistique, le sexe feminin est aussi atteint plus frequemment que le sexe masculin.

Il faut considérer de notre avis ce phénomène comme exception nel conditionné par de facteurs mentionnés précédemment. Les facteurs étiologiques y compris le facteur héréditaire sont susceptibles de jouer le rôle majeur, mais nous ne pouvions pas les verifier.

Notre matériel clinique montre nettement en ce qui concerne l'âge des malades atteints de cancer du rectum, que l'affection frappe presque tous les âges de la vie, de façon que notre plus jeune malade avait 15 ans et le plus agé 82 ans.

Le point culminant de cette affection passe par deux intervalles à savoir: entre 51 et 55 ans et entre 61 et 65 ans. Les années critiques avec apparition du cancer rectal commencent vers la quarantaine pour atteindre d'une façon continue et progressive son maximum vers 55 ans; ensuite c'est la chute progressive avec la courbe ascendante entre 61 et 65 ans, qui est en réalité le second point culminant.

D'après notre matériel clinique c'est l'intervalle entre 45 et 55 ans qui présente l'âge critique pour l'apparition du cancer du rectum.

Pour ce qui est de la localisation du cancer du rectum nous avons trouvé égalment dans notre statistique quelques écarts de la statistique de différents auteurs. Ainsi certains auteurs (Bacon, Hallborn etc.) indiquent les taux variables (entre 27 et 37 p.100) de localisations jusqu'à la hauteur de 8 cm. de la marge de l'anus et à localisation encore plus élevée dans 75 p.100, alors que d'après nos observations personnelles la localisation basse ne depassant pas 8 cm. de haut était de beaucoup la plus fréquente c'est à-dire 84 pour 100. A noter que la majorité avait la localisation vers 5 cm. de la marge anale et à peine 16 p. 100 avec la localisation au-dessus de 8 cm.

Nous tenons à souligner que ce dernier fait avait une influence déterminante sur notre attitude opératoire.

La discordance au moins apparente de nos données cliniques avec celles d'autres auteurs nous incite à penser que la cause en était la négligence de nos malades et l'extension du processus malin avec destruction du tissu et la circonference tumoral en longueur de 5 à 15 cm. Ce fait est confirmé par les antécédents où l'on decouvre l'évolution qui variait de 2 mois à 3 ans, en moyenne 9 mois et demi.

Ainsi nous sommes portés à penser qu'il ne s'agit pas chez nos malades d'une localisation exceptionellement basse et d'affections bien typiques, mais que cette localisation est plus apparente que réelle en relation avec les données des antécédents et la durée de l'affection.

Les données fournies par l'interrogatoire de not malades à côté des symptomes plus au moins caractéristiques de l'affection, montrent souvent une interprétation bizarre de leurs états: certains malades parlent de troubles alimentaires ou état catharral de l'ancienne terminologie, pour en finir avec les hémorroides. Les diarrhées profuses alternant avec constipation et selles sanguinolentes et glaireuses [illegible]

Ainsi nous trouvons dans notre matériel clinique que le temps écoulé entre les premiers symptomes remarqués par nos malades et l'admission à la Clinique oscille entre 2 mois et 3 ans ou en moyenne 9 mois et demi (Daumerie 7 mois, Ottenheimer 6 mois et demi).

A noter que nous avons rencontré aussi chez les intellectuels cette indolence envers les premières manifestations de l'affection bien entendu, avec moindre intervalle.

On a l'impression qu'il s'agit chez les intelectuels surtout d'une cancérophobie ou de la peur de la vèrité.

Par ailleurs nous tenons aussi à souligner qu'un groupe notable qui va jusqu'à 75 p.100 comprend les malades, qui alertés par leurs affections sont allés consulter le médecin, qui les a traités par les antibiotiques, suppositoires et divers onguents sans faire le toucher rectal classique. Ces malades acceptant de bon gré le diagnostic sans toucher continnaient ce traitement médicamenteux pendant des mois et même des anneés. Daumerie et Abel indiquent aussi l'importance de cette omission grave du médecin à la première consultation ou au cours du traitement dans 70 p.100 des malades atteints de cancer du rectum.

D'ailleurs la plupart des auteurs dan leurs analyses sur le cancer du rectum font relever cette omission souvent si lourde de conséquences.

Cependant cette question a une importance primordiale aussi bien au point de vue thérapeutique que pronostique.

La proctologie moderne a toutes les possibilité de resoudre ce problème avec succés à condition qp'on applique le toucher rectal obligatoire, à la première consultation du domaine proctologique.

De nombreux cas dans notre matèriel montrent dans le fait un phénomène bien triste: indolence et apahtie des malades en présence de certains symptomes serieux d'un côté et l'omission grave du mèdicin pour faire le toucher rectal de l'autre côté.

Malheureusement le fait est, que parfois c'est le gynécologiste qui révèle le premier le cancer du rectum malgré les troubles caractéristiques et les symptomes nets qui devraient orienter le médecin pratitien vers le rectum et l'inciter à faire le toucher rectal ou l'adresser pour la rectoscopie.

Si l'on demande à la chirurgie de donner des résultats durables dans le domaine de proctologie maligne, il est nécessaire de faire prende l'Rabitude au médecin practicient de procéder à l'examen rectal avec le plus grand soin et rejeter tout arsenal médicamenteux utilisé inutulement pour le traitement des soi-disant hémorroides et ignorant le cancer.

Le fait est que nous nous trouvons souvent en présence du cancer qui évolue depuis 5 à 6 ans sans aucune intervention chirurgicale comme on peut se rendre compte dans notre matériel. De l'autre côté le pronostic des opérés est loin d'être trop mauvais si l'on intervient au temps opportun.

Pour souligner l'importance des données anamnéstiques et de l'examen clinique propre nous allons rapporter l'histoire d'un malade qui souffrait de constipation depuis plusieurs années et qui se plaignait d'un prurit rebelle depuis deux mois. L'examen proctoscopique révélait dans la partie ampullaire du rectum une tumeur de grosseur d'un grain de froment, extirpée par voie endoscopique et identifiée histologiquement comme adenocarcinome. Le malade a été soumis ensuite à l'irradiation par Chaoul. Depuis cinq ans pas de manifestations locales de malignité et le malade doit être considére comme virtuellement guéri.

A notre avis c'est précisément en proctologie que le "depistage précoce" a une valeur exeptionnelle pour ne pas dire absolue par suite de la benignité relative de certaines tumeurs rectales et de leurs accessibilité, qui permet le diagnostic sans grande difficulté.

Il faut compter encore, bien entendu, dans l'avenir avec les malades atteints de cette affection maligne au stade avancé qu' il faut traiter et opérer dans de conditions bien difficiles, mais notre but doit viser à reduire les omissiones autant que possible et à améliorer les résultats définitifs. Les anciennes conceptions de la chirurgie qui demandaient les opérations limitées sont déjà perimées et ce n'est que la voie radical aujourd'hui universellement admise. qui assure un assez grand nombre de guérison et de resultats plus durables.

Diagnostic.—Pour diagnostiquer le cancer du rectum, il faut proceder de routine au toucher rectal et à l'endoscopie qui les seuls permettent de prélever une partie pour l'examen histologique en vue d'une intervention adéquete. Ce serait une grave faute de ne pas faire le prélèvement dans *tous les cas suspects, surtout lorsqu'il* s'agit de tumeurs haut situées où la differenciation endoscopique est malaisée. L'hyperplasie de la muqueuse, diverses lésions inflammatoires polypose etc. peuvent rendre l'identification de tumeurs malignes fort difficile. Dans cette recherche endoscopique il ne faut jamais se decourager et il faut persévérer. Quelques de nos observations ont bien montré que notre persévérence a été recompensée.

Si l'examen histo-pathologique ne cadrait pas avec les constatations cliniques, nous avons procédé à des prélèvements répétés pour bien fixer le diagnostic. Ainsi nous avions pu établir le diagnostic de malignité à plusieurs reprises par la biopsie répétée.

localisation dans l'anse sigmoide.

Traitement.—Dans le traitement du cancer du rectum le rôle préponderant revient à la chirurgie et aucume alternative thérapeutique d'utilité réelle n'existe. L'essentiel est de constater la présence d'une lésion maligne et d'n evaluer l'extension.

Nos observations personnelles montrent que la radiothérapie a une valeur plutôt secondaire et que les adenocarcinommes, et carcinomes gélatineux sont radio-resistants.

Pourtant il ne faut pas nier tout à fait les possibilités de la radiotherapie et certains auteurs signalent l'importance de la radiothérapie préopératoire pour les tumeurs rectales. Les lésions rectales provoquées par l'application du radium dans les tumeurs génitales ne sont susceptibles de montrer toujours son action favorable et utile.

Dans le décours postopératoire la thérapie par les rayons X peut être une méthode complémentaire utile.

L'application de la rentgenthérapie est très favorable dans le cancer anal si le sphincter n'est pas envahi et c'est aussi le point de vue de la plupart des auteurs. L'irradiation sans colostomie préalable diminue indubitablement le nombre des résultats favorables.

Dans l'évaluation des possibilités opératoires nous avons été quidés par le principe de l'opération radicale c'est-à-dire: extirpation de la tumeur aussi complète que possible dans tous les cas où la plus petite chance de l'opérabilité se présente. Bien des cas inopérables plus favorables que les nôtres: Boerema 40%, Delannoy 27%; Cahen 12,7%, Roger 35%, D'Allaines 15%. Les chiffres trop élevés de nos malades inopérables nous impose une tâche impérative d'insister sur la nécessité du diagnostic aussi précoce que possible.

Méthode Opératoires.—Nous insistons à nouveau sur le fait que dans notre matériel la plupart des tumeurs rectales était à la localisation basse ce qui déterminait à priori notre façon de procéder. C'est pourquoi dans 84 p.100 des cas nous étions obligés de pratiquer l'amputation d'aprés Guénu-Miles. Nous considérons cette méthode comme bien propice et la plupart des cirurgiens sont en train de l'adopter. Sa supériorité sur la méthode périnéale est bien certaine parce qu'elle facilite le contrôle des métastases el l'exérèse des ganglions. Nous sommes aussi résolument en faveur de l'anus iliaque définitif, car d'après nos expériences, l'anus iliaque a des avantages manifestes.

L'adaptation des malades à l'anus, au début peut provoquer une dépression psychique, se fait peu à peu grâce à l'habitude acquise et au contrôle et manipulation de l'anus. Ainsi l'anus iliaque permet le maintien normal des conditions alimentaires et hygiéniques. La capacité de travail revient après l'adaptation complète, de façon que nos malades p.ex. instituteurs, employés et ouvriers pouvaient vaquer à leurs affaires habituelles sans restriction.

L'anus périnéal et le procédé périnéal en général sont de notre avis, entachés de grande défauts parce que le malade est privé de possibilité de bien contrôler l'anus, d'où provient toute une serie d'ennuis pénibles. Les adeptes de l'anus périnéal (Bacon, Bacock, etc.) peuvent soutenir leur point de vue en faisant valoir l'ffet psychologique et l'illusion pour le malade d'avoir l'anus naturel.

Nous n'avons pratiqué la résection que dans 14,5 p.100. denos malades. C'est la méthode la plus efficicace à notre sens parce quelle assure la continence et l'effet la plus acceptable pour le malade. Malheureusement, la localisation bien basse dans l'ampoule rectale de notre matériel nous empêchait de réaliser de résections encore plus nombreuses.

Certains auteurs à grande expérience personnelle dans ce domaine pensent, que la résection est même faisable dans les cas de tumeurs à localisation à 5 cm. de l'orifice anal (D'Allaines). Pourtant notre expérience est contre cette façon de procéder, parce que, malgré la dissection très minutieuse, nous n'étions pas à même d'atteindre l'infiltration sous—muquese, sans compromettre la suture et favoriser l'apparition des récidives. En outre ce procédé, il nous semble, peut handicaper la visée radicale de l'intervention. C'est pourquoi nous n'adaptons la résection que dans les cas où la tumeur est située de 8 à 10 cm. de l'anus. Avec cette façon de procéder nos résections se sont passées sans complications notables. En tout cas les fistules étant corrigées la continence compléte a été assurée.

Par larésection à la manièr de Hochenegg-Bacock-Bacon, selon notre expériance, on arrive à réaliser une continence rélative au cours de 3 à 6 mois, qui finit par devenir définitive. Dans certains cas d'ailleurs rares, elle est entachée par la tendence sténosante, soit après la section du sphincter, soit après la dilatation.

Chez les malades opérés à visée radicale la mortalité immédiate (jusqu'à un mois après l'opération) était 16 p.100, tandis que chez les malades à l'operation palliative pendant le même laps de temps était de 10,5 p.100.

Nous estimons, que notre taux de mortalité est assez élevé et la raison en est le stade avancé et la gravité de l'état de nos malades. Bien des auteurs rapportent les statistiquee sur la mortalité plus favorables que les nôtres ce qui devrait être en relation avec Meilleur état de leurs malades au moment de l'intervention.

La colostomie temparaire comme soupape de sûretê nous semble très utile dans les résections pour empêcher le lâchage des sutures.

A noter aussi que le drainage à travers la région fessière nous a donné des résultats très favorables de façon que nos malades ont pu se lever déjà dès premiers jours.

Resultas.—Parmi 45 malades à opération radicale nous avions à déplorer le dècès:

au cours de la 1 ère année dans 15,6 p. 100
au cours de la 2 e année dans 12,5 p. 100
au cours de la 3 e année dans 3,1 p. 100
au cours de la 4 e année dans 6,2 p. 100
Les données nous manquent dans 18,1 p. 100.

Opérations Palliatives.—Ches 49 malades où n'avons pratiqué qu'une simple colostomie la mortalité au cours du premièr mois après l'intervention était 10,5 p.100.

décès au cours de la 1 ère année 39,4 p. 100
décès au cours de la 2 e année 10,5 p. 100
décès au cours de la 3 e année 5,2 p. 100
Nous manquons de données pour 26,3 p. 100.

Il ressort de l'analyse des observations de 17 malades où l'on n'a pratiqué aucune intervention pour des raisons subjectives le décès est survenu:

au cours de la 1 ère année dans 11,7 p. 100
au cours de la 2 é année dans 5,8 p. 100
au cours de la 3 é année dans 5,8 p. 100

Il y avait encore en vie de ce groupe:

au cours de la 1 ère année....23.5 p. 100
au cours de la 2 é année .. 11,17 p. 100
au cours de la 3 é année . 5,8 p. 100
Pour 35.2 p. 100 pas de données.

Les résultates histo-pathologique sont les suivantts:

adénocarcinome	82
Ca platocellulaire	4
Ca cylindrocellulaire	1
Ca gélatineux	2
adénocarcin. et papillome	[illegible]
adénocarcin. et [illegible]	1
Ca [illegible]	5

Récidives.—Nous avions à combattre pendant 4 ans par des interventions répétées les *récidives* que remplissaient le bassin dans un cas du carcinome gélatineux. A la fin c'est la métastase pulmonaire qui a emporté le malade.

Les carcinomes de la région anale donnaient des métastases dans les ganglions inguinaux le plus souvent même au cours de la première année.

RÉSUMÉ

L'analyse des observations de 136 malades nous a révélé: (1) sur 52 sujets de sexe masculin 84 sujets de sexe feminin; (2) l'intervalle de vie critique avec maximum de tumeurs rectales est entre 45 et 55 ans; (3) le temps entre la manifestation des premiers symptomes et la premiére consultation oscillait entre 2 mois et 3 ans, en moyenne 9 mois et demi; (4) pour ce qui est de la localisation 84 p.100 se trouvaient dans l'ampoule rectale jusqu'à 8 cm. de haut; (5) 44 p.100 cas inopérables; (6) dans 84 p.100 l'amputation est pratiquée et dans 14,5 p.100 seulement la résection; (7) mortalité immédiat (jusqu'à un mois après l'operation) 16 p.100; (8) résultats éloignés montrent que la mortalité la plus élevée était au cours de la première année 15.6 p.100; (9) examen anatomopathologique adénocarcinome prédominait et (10) la méthode de choix reste d'ailleurs la résection avec conservation du sphincter, mais l'opération à visée radicale *est souvent rendue impossible en raison de* difficultés techniques insurmontables et par conséquent les résultats définitifs dans beaucoup de cas sont loin d'être très satisfaisants. L'anus iliaque est à conseiller dans tous les cas où l'on a fait l'amputation.

des cas inopérables plus favorables que les nôtres: Boerema 40%, Delannoy 27%; Cahen 12,7%, Roger 35%, D'Allaines 15%. Les chiffres trop élevés de nos malades inopérables nous impose une tâche impérative d'insister sur la nécessité du diagnostic aussi précoce que possible.

Méthode Opératoires.—Nous insistons à nouveau sur le fait que dans notre matériel la plupart des tumeurs rectales était à la localisation basse ce qui déterminait à priori notre façon de procéder. C'est pourquoi dans 84 p.100 des cas nous étions obligés de pratiquer l'amputation d'aprés Guénu-Miles. Nous considérons cette méthode comme bien propice et la plupart des cirurgiens sont en train de l'adopter. Sa supériorité sur la méthode périnéale est bien certaine parce qu'elle facilite le contrôle des métastases el l'exérèse des ganglions. Nous sommes aussi résolument en faveur de l'anus iliaque définitif, car d'après nos expériences, l'anus iliaque a des avantages manifestes.

L'adaptation des malades à l'anus, au début peut provoquer une dépression psychique, se fait peu à peu grâce à l'habitude acquise et au contrôle et manipulation de l'anus. Ainsi l'anus iliaque permet le maintien normal des conditions alimentaires et hygiéniques. La capacité de travail revient après l'adaptation complète, de façon que nos malades p.ex. instituteurs, employés et ouvriers pouvaient vaquer à leurs affaires habituelles sans restriction.

L'anus périnéal et le procédé périnéal en général sont de notre avis, entachés de grande défauts parce que le malade est privé de possibilité de bien contrôler l'anus, d'où provient toute une serie d'ennuis pénibles. Les adeptes de l'anus périnéal (Bacon, Bacock, etc.) peuvent soutenir leur point de vue en faisant valoir l'ffet psychologique et l'illusion pour le malade d'avoir l'anus naturel.

Nous n'avons pratiqué la résection que dans 14,5 p.100. denos malades. C'est la méthode la plus efficicace à notre sens parce quelle assure la continence et l'effet la plus acceptable pour le malade. Malheureusement, la localisation bien basse dans l'ampoule rectale de notre matériel nous empêchait de réaliser de résections encore plus nombreuses.

Certains auteurs à grande expérience personnelle dans ce domaine pensent, que la résection est même faisable dans les cas de tumeurs à localisation à 5 cm. de l'orifice anal (D'Allaines). Pourtant notre expérience est contre cette façon de procéder, parce que, malgré la dissection très minutieuse, nous n'étions pas à même d'atteindre l'infiltration sous—muquese, sans compromettre la suture et favoriser l'apparition des récidives. En outre ce procédé, il nous semble, peut handicaper la visée radicale de l'intervention. C'est pourquoi nous n'adaptons la résection que dans les cas où la tumeur est située de 8 à 10 cm. de l'anus. Avec cette façon de procéder nos résections se sont passées sans complications notables. En tout cas les fistules étant corrigées la continence compléte a été assurée.

Par larésection à la manièr de Hochenegg-Bacock-Bacon, selon notre expériance, on arrive à réaliser une continence rélative au cours de 3 à 6 mois, qui finit par devenir définitive. Dans certains cas d'ailleurs rares, elle est entachée par la tendence sténosante, soit après la section du sphincter, soit après la dilatation.

Chez les malades opérés à visée radicale la mortalité immédiate (jusqu'à un mois après l'opération) était 16 p.100, tandis que chez les malades à l'operation palliative pendant le même laps de temps était de 10,5 p.100.

Nous estimons, que notre taux de mortalité est assez élevé et la raison en est le stade avancé et la gravité de l'état de nos malades. Bien des auteurs rapportent les statistiquee sur la mortalité plus favorables que les nôtres ce qui devrait être en relation avec Meilleur état de leurs malades au moment de l'intervention.

La colostomie temparaire comme soupape de sûretê nous semble très utile dans les résections pour empêcher le lâchage des sutures.

A noter aussi que le drainage à travers la région fessière nous a donné des résultats très favorables de façon que nos malades ont pu se lever déjà dès premiers jours.

Resultas.—Parmi 45 malades à opération radicale nous avions à déplorer le décès:

au cours de la 1 ère année dans 15,6 p. 100
au cours de la 2 e année dans 12,5 p. 100
au cours de la 3 e année dans 3,1 p. 100
au cours de la 4 e année dans 6,2 p. 100
Les données nous manquent dans 18,1 p. 100.

Opérations Palliatives.—Ches 49 malades où n'avons pratiqué qu'une simple colostomie la mortalité au cours du premièr mois après l'intervention était 10,5 p.100.

décès au cours de la 1 ère année 39,4 p. 100
décès au cours de la 2 e année 10,5 p. 100
décès au cours de la 3 e année 5,2 p. 100
Nous manquons de données pour 26,3 p. 100.

Il ressort de l'analyse des observations de 17 malades où l'on n'a pratiqué aucune intervention pour des raisons subjectives le décès est survenu:

au cours de la 1 ère année dans 11,7 p. 100
au cours de la 2 é année dans 5,8 p. 100
au cours de la 3 é année dans 5,8 p. 100

Il y avait encore en vie de ce groupe:

au cours de la 1 ère année ..23.5 p. 100
au cours de la 2 é année . 11.17 p. 100
au cours de la 3 é année ... 5,8 p. 100
Pour 35.2 p. 100 pas de données.

Les résultates histo-pathologique sont les suivantts:

adénocarcinomes . . .	62
Ca platocellulaire	4
Ca cylindrocellulaire .	1
Ca gélatineux	2
adénocarcin. et papillome .	3
adénocarcin. et Sa globocellul . .	1
Ca à épithelium de transition	5

Récidives.—Nous avions à combattre pendant 4 ans par des interventions répétées les récidives que remplissaient le bassin dans un cas du carcinome gélatineux. A la fin c'est la métastase pulmonaire qui a emporté le malade.

Les carcinomes de la région anale donnaient des métastases dans les ganglions inguinaux le plus souvent même au cours de la première année.

RÉSUMÉ

L'analyse des observations de 136 malades nous a révélé: (1) sur 52 sujets de sexe masculin 84 sujets de sexe feminin; (2) l'intervalle de vie critique avec maximum de tumeurs rectales est entre 45 et 55 ans; (3) le temps entre la manifestation des premiers symptomes et la premiére consultation oscillait entre 2 mois et 3 ans, en moyenne 9 mois et demi; (4) pour ce qui est de la localisation 84 p.100 se trouvaient dans l'ampoule rectale jusqu'à 8 cm. de haut; (5) 44 p.100 cas inopérables; (6) dans 84 p.100 l'amputation est pratiquée et dans 14,5 p.100 seulement la résection; (7) mortalité immédiat (jusqu'à un mois après l'operation) 16 p.100; (8) résultats éloignés montrent que la mortalité la plus élevée était au cours de la première année 15,6 p.100; (9) examen anatomopathologique adénocarcinome prédominait et (10) la méthode de choix reste d'ailleurs la résection avec conservation du sphincter, mais l'opération à visée radicale est souvent rendue impossible en raison de difficultés techniques insurmontables et par conséquent les résultats définitifs dans beaucoup de cas sont loin d'être très satisfaisants. L'anus iliaque est à conseiller dans tous les cas où l'on a fait l'amputation.

Réflexions au Sujet de l'Abord Direct en Tuberculose Chirurgicale

(Reflections on Surgical Tuberculosis)

B. BLANKOFF, M.D.*

BRUSSELS, BELGIUM

The author reports 98 operations (synovectomy and curettage), 11 of which were recently performed for tuberculosis of the bones and joints. These procedures included operations on 23 spines, 51 hips, 23 knees and 1 foot. He lists the results and describes in detail the complications encountered and the causes of failure when the result was unsatisfactory. He comments successively on the difficulties of diagnosis, the importance of anatomopathologic point of view, the indications for surgical intervention and their possible abuse, and the role of antibiotics in therapy. He points out the differences that exist between clinical and roentgenographic results, the duration of immobilization, the sclerous type of the disease and the type accompanied by persistent fever. The operation he describes is considered excellent for either children or adults when the onset of disease is recent, but distinctly bad for either in cases of long-standing tuberculosis. In any circumstances, it is a severe and demanding procedure which not every surgeon is competent to perform.

LE CHOIX du terme abord direct n'est pas heureux. Tout curage osseux, toute synovectomie, tout nettoyage d'abcès sont toujours des abords directs.

Abandonnons cette discussion. Précisons que dans l'esprit des promoteurs l'abord direct implique suivant la région une synovectomie, une ouverture et nettoyage d'abcès, un curage osseux limité, abordé directement au siège meme de la lésion, et pour éviter de s'égarer dans des discussions oiseuses, gardons cette expression.

Pour dire que la seule chose neuve en la matière est la possibilité de curetter, évider à la demande, avec un minimum de risques d'essaimage, de métastases, de fistulisation grâce aux antibiotiques directement introduits dans le foyer ainsi nettoyé.

Notre statistique globale, comprenant les diverses articulations curettées, se monte à 87 cas, auxquels il faut ajouter II cas en cours de traitement—dont 32 cas de tuberculoses multiples, et dont voici la repartition.

Ceci établi nous voudrions faire suivre ces données de quelques considérations concernant cet abord direct.

Les unes sont d'ordre général, d'autres sont locales.

I. Les considérations d'ordre général ont trait:

au diagnostic
à l'anatomo-pathologie
aux indications
à l'importance de l'intervention
à l'antibiotique

a) *Diagnostic*: Il est entendu par défi-

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nition que l'abord direct doit être aussi précoce que possible et s'adresser à des lésions de tuberculose chirurgicale. Ceux qui sont rompus aux problèmes de la T.O.A. savent les hésitations, les difficultés, les embuches de ces diagnostics. Dans notre pratique courante nous savons combien il est périlleux parfois d'affirmer ou d'infirmer le diagnostic de tuberculose, même et surtout en Institut.

Nous avons insisté sur certaines de ces difficultés: Tuberculose et ostéoarthrite à pneumocoque, tuberculose et Sudek, tuberculose et tumeur, tuberculose et ostéochondrite, et l'école de Berck a insisté sur le fait qu'au genou, par exemple, 2 à 7 ans sont parfois nécessaires pour établir un diagnostic ferme et avéré de tuberculose.

Et l'on peut se demander jusqu'à quelles limites du doute on peut opérer, à quels critères obéir, quel est le seuil entre forte présomption et certitude dans ces cas débutants et autorisent-ils l'intervention?

Car il est bien entendu n'est-ce-pas qu'opérer avec succès des tuberculoses qui n'en sont pas n'est pas une solution et que dans ces cas l'abord direct ne se justifie pas.

Poser la question n'est pas la résoudre.

Nous restons inquiets devant le fait que certaines lésions se présentent à nous avec tous les signes cliniques de tuberculose, avec des signes radiographiques précoces, mais où manque, après intervention, la certitude anatomo-pathologique post-opératoire. Alors? N'avons nous pas opéré une tuberculose qui n'en était pas.

La seule conviction clinique suffit-elle à justifier la sanction thérapeutique?

Faut-il intervenir? Faut-il s'abstenir? Et dans ce cas l'abord direct du foyer précoce ne risque-t-il, si l'on attend, de se trouver gravement compris?

b) Notre 2ème point d'inquiétude a trait aux examens de [illegible]

[illegible] 2[illegible] [illegible] [illegible]

Nous nous y sommes attardés suffisamment dans plus d'une communication sur la T.O.A. et particulièrement dans celles traitant de l'abord direct et celles du dépistage précoce des T.O.A. du genou.

Disons, grosso modo, qu'un peu plus d'1/3 des cas n'apporte pas la preuve formelle de la nature T de l'affection malgré l'évidence clinique et notre conviction absolue qu'il s'agit bien de T.

Mais nous avons insisté sur les faits qu'à prendre un certain nombre de cas "par la bande," notre conviction clinique et radiographique se vérifie exacte. Des malades négatifs pour le laboratoire auront du caséum dans leur abcès parfois dans des lésions multiples l'une sera négatif à ce point de vue tandis que l'autre nous apportera la preuve de sa nature T. Tantôt le cobaye sera négatif et l'anatomo-pathologie positif ou inversément. Parfois Ier cobaye est négatif alors qu'un 2ème injecté avec le même prélèvement est positif. D'autres fois encore l'evamen anatomo-pathologique s'avère négatif mais le liquide synovial renfermera du B. K. Il arrive que l'examen anatomo-pathologique soit négatif pour l'os, positif pour la synoviale ou inversement. La culture s'avère parfois positif alors que tous les autres examens sont négatif.

Disons que toutes les possibilités et toutes les modalités se sont présentées tant pour l'examen direct, la culture, l'homogénisation, l'examen anatomo-pathologique et toutes les combinaisons se sont trouvées réalisées dans nos cas, dans le positif comme dans le négatif.

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Cette persistance de B. K. emmurés, toujours sensibles aux antibiotiques qui ne les ont pas tués, n'est-elle pas de nature à provoquer des réveils. Et notre vigilance doit s'accroitre dans ces formes si spéciales de T.O.A. au décours de méningites ou de granulies et sur lesquelles Fouquet a insisté avec ses collaboratuers; à côté des formes graves et mortelles malgré les antibiotiques, il y a des formes trainantes absolument insensibles aux antibiotiques et qu'il serait dangereux d'opérer.

II. *Les considérations d'ordre local ont* trait aux complications et aux insuccès.

a) *Complications*

A la colonne: 19/23 cas, soit 82,60%—certaines sans conséquences; ouverture du péritoine (2 cas) de la plèvre (7 cas), hémorragie abondante (4 cas) paresthésie transitoire (1 cas), 2ème foyer (1 cas), hernie musculaire (1 cas), abcès et fistulisation (2 cas), Brown Sequard (1 cas).

Si l'ouverture de la plèvre et du péritoine furent sans conséquence en général, la suture d'un cas de plèvre fut très difficile; deux épanchements, l'un séreux vite guéri, l'autre une pleurésie séro-fibrineuse puis purulente fut d'assez longue durée et finalement fermée. Les 4 hémorragies furent deux fois en nappe intercostale, deux fais lombaire; leur suture fut toujours pénible dans un abondant tissu scléreux en sorte que si même il n'y eut aucune suite, cette complication retarde la bonne marche de l'intervention et présente un réel désagrément: elle présente en outre des risques graves. Ni la hernie, ni la paresthésie transitoire n'ont présenté de suites fâcheuses; un 2e foyer est apparu après l'intervention dans un cas. [illegible] [illegible] fistulisation et la [illegible] de deux cas ont été des complications sérieuses et graves. De même qu'un syndrome de Brown Sequard avec sequelles thermo-algésiques et neurologiques définitives.

En sorte que, ramenant à 7 les complications importantes ayant sur le cours normal de l'évolution une influence pernicieuse avec sequelles trainantes ou définitives, nous dirons qu'à la colonne les complications s'élèvent à 30,43%.

A la hanche: 4 cas ont des aggravations importantes, soit 11,36%.

Il est à remarquer d'ailleurs que ce sont à la hanche comme à la colonne les foyers les plus anciens qui sont tributaires des plus graves complications.

Au genou, comme il fallait s'y attendre, les complications sont moindres.

Sur 19 cas: 6 cas: récidive (1) aggravation (1), attitude vicieuse (1), hydarthrose transitoire et persistance passagère de gonflement (3 cas) avec très bon résultat final, soit 31,57%; se ramenent à 3 cas de complications graves, soit 15,78%.

l'unique cas *du pied fut un insuccès*

b) *Les insuccès se chiffreront*:

A la colonne: 5 cas/23:
- métastase I
- extension de la lésion: 2
- fistulisation: 2, soit 21,78%

A la hanche: 23/44:
- arthrodèse pour inadaptation: 5—et marche mauvaise
- arthrodèse pour sequelle malgré curage et aggravation: 7
- abcès: 6
- métastase: 2
- aggravation radiographique: 3. soit 50%

Certes les arthrodèses définitives pour inadaptation, attitude vicieuse, aggravation ont été définitivement guéries après cette 2me intervention, ce qui ne réduit pas le pourcentage d'aggravation [illegible] 50% [illegible] à charge de [illegible] [illegible] [illegible]

c) *Indication*: quand on examine l'indication de l'intervention de l'abord direct la plus grande confusion y règne.

L'abord direct, la déclaustration, suivant l'élégante expression de Cauchoix, réservé chez ses promoteurs aux foyers précoces, centraux ou plus exactement intraosseux, avait pour but en fait d'empêcher une ostéite limitée de s'étendre et devenir une ostéo-arthrite catastrophique.

Petit poisson deviendra grand.

Sous condition expresse que le curettage se fasse aussi tôt que possible après le début de la maladie ou de sa constatation, quand les lésions sont encore circonscrites.

d) *Importance de l'intervention*

Mais ne voyons nous pas à l'abord précoce succéder un abord direct qui n'est plus précoce du tout. Puis à l'abord du foyer limité se substitue un abord de foyer étendu et l'on parlera de chirurgie d'exérèse, de vidage de foyer pottique et l'on finira par énucléer une tête de fémur, voire extirper une entière vertèbre qu'on attaquera de droite et de gauche pour la transpercer, l'on finira par curetter un foyer de plusieurs vertèbres et faire un vrai "nettoyage par le vide."

Bref, des formes localisées aux formes trainantes, aux abcès et aux fistulisations, des formes du début aux tardives, toutes les variétés possibles de T.O.A. ont été traitées par l'abord direct.

Ainsi résumée l'indication princeps et son extension à des cas plus graves, on comprend qu'il ne soit pas possible de discuter le problème, car on traite de choses trop différentes et que l'on ne s'étonne pas alors si les résultats sont des plus variés.

e) *Antibiotiques*

Faire un abord direct après 24 h. d'antibiotique est un non sens à ne pas suivre, et c'est la première remarque.

La 2eme a trait au test de sensibilité aux antibiotiques. Le fait-on ou pas? Cela n'apparait pas clairement, pour ne pas dire pas du tout de certains travaux. Or qu'advient-il de l'intervention si le sujet est résistant? Nous courons les risques d'essaimage et de généralisation redoutables analogues à ce que l'on avait à la période qui précéda la découverte des antibiotiques.

Sans doute, et nous l'avons déjà dit, Cauchoix a rapporté les expériences de

Sexe et age	*Localisation*				
	Pott	*Hanche*	*Genou*	*Pied*	*Total*
Hommes	11	7	1		19
Garçons	11	19	7		30
Femmes	5	4	2		11
Filles	3	14	9	1	27
en cours		7	4		11
Total	23	51	23	1	98
Les 32 cas multiples sont:					
Hommes	10				
Garçons	9				
Femmes	4				
Filles	9				

Associant des Pott multiples, des coxalgies doubles, des Pott avec coxalgies, genou, lésions génito-urinaires, des genoux avec hanches, coude, poignet, sacro-iliaque, etc. . . .

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Au genou, comme il fallait s'y attendre, les complications sont moindres.

Sur 19 cas: 6 cas: récidive (1) aggravation (1), attitude vicieuse (1), hydarthrose transitoire et persistance passagère de gonflement (3 cas) avec très bon résultat final, soit 31,57% ; se ramenent à 3 cas de complications graves, soit 15,78%.

l'unique cas *du pied fut un insuccès*

b) *Les insuccès se chiffreront*:

A la colonne: 5 cas/23:
  métastase I
  extension de la lésion: 2
  fistulisation: 2, soit 21,78%

A la hanche: 23/44:
  arthrodèse pour inadaptation: 5—et marche mauvaise
  arthrodèse pour sequelle malgré curage et aggravation: 7
  abcès: 6
  métastase: 3
  aggravation radiographique: 5,
  soit 50%

Certes les arthrodèses définitives pour inadaptation, attitude vicieuse, aggravation ont été définitivement guéris après cette 2ème intervention, ce qui [illegible] le pourcentage d'aggravations [illegible] 50% [illegible] à charge de l'[illegible] [illegible]

		localisations									
		Hanche: 44			*Colonne 23*			*Genou 19*			
Sexe et age	*Nombre*	*T.B.*	*B.*	—	*T.B.*	*B.*	—	*T.B.*	*B.*	—	*Total*
Hommes	19	2	—	5	4	4	3	—	1	—	19
Garçons	30	8	4	7	1	2	1	6	—	1	30
Femmes	11	1	—	3	1	2	2	—	2	—	11
Filles	26	5	2	7	1	1	1	5	2	2	26
en cours	11										11
pied	1										1
Totaux	98	16	6	22	7	9	7	11	5	3	98

Au genou: 3 insuccès dont nous avons vu les raisons plus haut: 15,78%

c) D'autres considérations d'ordre local seront rapidement esquissées ici:

I. *A la hanche* a) il y a des *divergences* entre le résultat final clinique et le résultat radiographique.

Il en est de même au genou.

Tandis que la marche s'améliore dans certains cas, le résultat radiographique reste inquiétant: déclacification, petites érosions nouvelles. Le recul de 3-4 ans nous impose de considérer ces cas comme guéris; l'avenir nous éclairera sur les récidives possibles à retardement.

b) Faut-il luxer la tête et curetter les foyers postérieurs comme Delchef l'a fait deux fois? Le problème n'est pas élucidé.

Nous savons qu'au genou l'ablation totale, l'éradication de tous les foyers, d'ailleurs impossible, n'est pas indispensable; mais les conditions des deux articulations ne sont pas les mêmes et le rétablissement d'une circulation à plein canal dans une résection ne peut se comparer à un abord de hanche. L'abord du genou se fait dans les cas sans érosions, avec des lésions à prédominance synoviale et si un foyer est extirpé dans l'os il est minime et en dehors des appuis articulaires.

c) un certain nombre de cas, 21/44, ne gagnent pas de mouvements. La hanche se stabilise mais les mouvements n'augmentent pas; 5 cas ont fait une coxa magna.

Peut-être faut-il incriminer dans ce but non atteint (la plus grande amplitude de mouvements) une immobilisation trop longue. Peut-être faudrait-il pour une courte période immobiliser en rotation interne en gouttière plâtrée. Ceci aurait l'avantage de permettre une surveillance et une mobilisation progressive tout en maintenant le membre inférieur en bonne position.

Quelques rares cas (3) ont fait une T° subfébrile longtemps persistante; l'un a guéri avec une splendide récupération et sans complications, deux autres ont fait des métastases, I genou a fait une poussée aiguë ultérieure.

d) *A la colonne*: certains aspects radiographiques ont fait penser à des géodes centrales; la curette ne les traverse pas tellement l'os est dur et résistant. Il semble donc qu'il faille considérer ces images non comme des caverses mais les interpréter comme des séquelles d'anciennes lésions qu'il est inutile de curetter.

Il est trop tôt pour se prononcer sur les foyers multiples, mais il semble que le curage et la guérison de l'un n'a que peut d'influence sur l'évolution du ou des autres et cela se comprend.

II. *Résultats*

Nos résultats globaux vont se résumer dans le tableau suivant (page 102).

En résumé: Nous dirons que l'abord direct est une excellente opération dans les formes débutantes tant de l'enfant que de l'adulte; à condition de ne pas étendre l'abord aux cas anciens, étendus, qui ne répondent plus aux critères de l'intervention.

Cela ne veut pas dire les curages, évidement, etc. . . . ne puissent se faire dans des conditions bien précises, mais les risques sont grands. Il faudra soigneusement établir le bilan du patient: température, état général, vérifier tous les signes de toxi infection et ne pas risquer ce genre d'opération à la légère. Il faudra surtout se garder d'englober ce 2ème genre d'intervention dans les cas d'abords directs précoces et limités, car il s'agit de tout autre chose.

Il faudra par conséquent encore opérer les cas le plus tôt possible et se garantir d'un diagnostic erroné en s'entourant de toutes les investigations et de toutes les confrontation. Nous vous avons montré combien c'était parfois difficile.

Le % de complications est dans l'abord direct sensiblement le même que dans toute intervention en T.O.A. et il ne présente pas un gain de temps extraordinaire. Ce n'est d'ailleurs pas son but.

En fin, on ne perdra pas de vue que c'est une opération sérieuse et grave et qu'il ne faut laisser faire que par des mains expertes et rompues à la chirurgie ostéo-articulaire.

RÉSUMÉ

L'auteur fait état de 98 opération d'abord direct: 23 colonnes, 51 hanches, 23 genoux, I pied, dont II récents. Il en donne les résultats. Il détaille les complications et les causes d'insuccès. Il envisage successivement les difficultés diagnostiques, les embuches anatomo-pathologiques, les indications et leur abusive extension, le rôle de l'antibiotique et discute des divergences entre les résultats clinique et radiographiques, du rôle et de la durée de l'immobilisation, des formes scléreuses, de l'image radiographique, des formes à température persistante. Et conclut en disant que l'intervention est excellente dans les formes jeunes de l'enfant et de l'adulte, qu'elle est détestable dans les formes anciennes et qu'elle reste une intervention grave, à ne pas mettre entre toutes les mains.

ZUSAMMENFASSUNG

Der Verfasser berichtet über 98 operative Herdausräumungen: 23 Wirbelsäulen, 51 Hüften, 23 Knien, 1 Fuss, wovon 11 frische Fälle. Er gibt die erzielten Erfolge an, vereinzelt die Komplikationen und die Ursachen der Misserfolge. Er unterstreicht nacheinander die Schwierigkeiten der Diagnose, der Anatomo-Pathologie, und bespricht das Auseinanderlaufen der klinischen und Radiographischen Erfolge, die Rolle und die Dauer der Immobilisation, die sklerösen Formen, das Röntgenbild, die Formen mit dauerhaftem Fieber.

SCHLUSSFOLGERUNG

Diese Operation ist vortrefflich bei frischen Formen beim Kinde und Erwachsenen, schlecht bei älteren Fällen, und bleibt eine ernste Intervention, welche [illegible] nicht irgend einem [illegible]

Sección en Español

Oclusión Intestinal Aguda por Hernia Crural Via de Acceso Media Subumbilical

(Intestinal Occlusion by Crural Hernia: Subumbilical Approach)

OCTAVIO MONTANEZ M., M.D.

MÉXICO D. F., MÉXICO

La oclusión intestinal aguda es causada en 45 a 50 por ciento de los casos por una hernia externa. Esta[1] es, pues, su causa más frecuente.

Aun cuando la variedad inguinal constituye un 80 por ciento de todas las hernias, la crural se estrangula de 8 a 10 veces más frecuentemente que la inguinal. De cada 10 hernias estranguladas, 4 son crurales.

On the basis of his observation that in 45 to 50 per cent of cases of intestinal obstruction the cause is an external hernia, especially of the crural type, the author discusses this relation and its implications, pointing out that the mortality rate from strangulated crural hernia ranges from 20 to 30 per cent and the recurrence rate 10 to 20 per cent. He describes various approaches to the crural hernia and the difficulties associated with each. The advantages offered by the subumbilical, medial or paramedial approach are enumerated and the operative technic described. The results obtained in personal cases are given; there were no deaths due to the operation and no recurrences of the hernia. The author considers the technic worthy of the attention of other surgeons.

Por otra parte, tenemos que de un 25 a un 40 por ciento[2] de las hernias crurales se obstruyen o se incarceran y dan, consecuentemente, un cuadro abdominal agudo.

En el presente trabajo no nos ocuparemos de las medidas *no* quirúrgicas, tales como la succión del contenido gastrointestinal, la administración de líquidos y electrolitos, las transfusiones de sangre, plasma y proteínas, etc., medidas que son, sin duda, de la máxima importancia en el tratamiento de las oclusiones intestinales.

Nuestro propósito es dar a conocer una via de acceso a la hernia crural que consideramos como el procedimiento ideal para la mayoría de los casos. Creemos que el uso más extendido de esta via contribuirá a hacer descender las cifras de mortalidad y morbilidad operatorias, así como a reducir el número de hernias reproducidas.

No siempre el tratamiento quirúrgico en la hernia crural estrangulada se instituye con la prontitud debida, por varias circunstancias:

1) La paciente ignora, frecuentemente, que tiene una hernia.

2) Los síntomas pueden no ser, al prin-

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cipio, alarmantes.

3) Algunas veces la hernia crural pasa desapercibida a la exploración física, particularmente las hernias pequeñas en personas obesas.

4) En ocasiones se intentan maniobras para reducir la hernia, sin éxito casi siempre, debido a la anatomía del canal crural y a las particularidades del saco herniario. De hecho, estas maniobras pueden ser — y con frecuencia son — nocivas.

A la fecha, los resultados del tratamiento quirúrgico de la hernia crural estrangulada no son satisfactorios porque.

1) La mortalidad operatoria, salvo en algunos reportes excepcionales, es del orden del 20 al 30 por ciento, y aún más elevada.

2) La hernia se reproduce en un 10 a 20 por ciento de los casos y puede entonces dar origen a una nueva estrangulación que será más difcil de tratar que la primera.

A pesar de todo ésto, se observa cierta complacencia de parte de los cirujanos, quienes siguen empleando los procedimientos habituales, sin preocuparse por encontrar alguno que lleve a obtener mejores resultados, tanto inmediatos como a distancia.

Son de uso corriente dos vias de acceso, la crural y la inguinal que, desde luego, sólo permiten intervenir de un lado y que, no obstante su amplia difusión, son anatómica y quirúrgicamente incorrectas.

Via Crural.—La via de acceso crural, femoral o baja, tiene los siguientes inconvenientes:

1) Se llega—o se trata de llegar—al cuello del saco por el punto más distante.

2) Es técnicamente difícil—o aun imposible—suturar el ligamento inguinal de Poupart a la cintilla ileo-pectínea de Cooper, pues de lo que se está intentando [illegible] a un embudo por su parte más [illegible]. La mayor parte de las veces se toma—aun de buena fe—la fascia de recurbrimiento del músculo pectíneo por el ligamento de Cooper y, desde luego, es claro que esta aponeurosis carece de la resistencia necesaria para mantener una buena coaptación.

3) La arteria obturatriz de curso anómalo—presente en un 25 a 30 por ciento de los casos—es difícil de ver, y aun más difícil de ligar, en caso de ser lesionada al incindir el ligamento lacunar de Gimbernat.

4) La viabilidad del intestino es muy difcil de establecer si se está trabajando a la altura del tercio superior del muslo.

5) La anastomosis intestinal, en caso de hacerse necesaria, es sumamente laboriosa, pues que hacer todavía más tracciones sobre las asas del intestino.

6) Es difícil, y peligroso, hacer pasar las asas anstomosadas a la cavidad abdominal a través del canal crural.

7) A pesar de loqque se podría suponer en contra, sí se daña de alguna manera el mecanismo del canal inguinal, pues aparece una hernia inguinal directa en un 7 por ciento de los operados de hernia crural por via baja.[3]

Via Inguinal.—La via de acceso inguinal, alta, de Annandale, de Lotheissen, etc., a pesar de su amplio uso es también inadecuada porque:

1) Lesiona directamente el mecanismo, hasta entonces intancto, del canal inguinal, y determina la aparición posterior de una hernia inguinal directa, como consecuencia del daño causado a la pared posterior del propio canal.

2) El reconicimiento de la viabilidad intestinal es difícil.

3) La confección de la enteroanastomosis se hace a tensión.

Via Abdominal.—Esta vía de acceso para la hernia crural, ideada por los cirujanos Sir G. Lenthal Cheatle y A. K. Henry, [illegible]

[illegible]

mencionados para las otras dos y en cambio tiene las siguientes ventajas:

1) Permite intervenir sobre ambos anillos crurales por una sólo incisión. A este respecto hay que recordar que la hernia crural es bilateral en 20 por ciento de los casos.

2) El campo operatorio es magnífico. Se obtiene, como dice el propio Henry[4c] "una admirable exposición del anilli crural, tal como si se tratara de una pieza preparada para una demostración de anatomía."

3) La vena ilíaca externa, que a este nivel cambia de nombre a femoral, queda a la vista y a salvo de ser herida durante las maniobras operatorias. El tenerla siempre a la vista impide que se coloquen puntos de sutura que la constriñan y puedan causar una trombosis postoperatoria.

4) Una arteria obturatriz anómala se ve y se liga fácilmente.

5) La liberación de la constricción del saco se hace bajo el control de la vista y con entera seguridad.

6) El saco herniario es ligado tan alto como se desee.

7) La decisión sobre la viabilidad del asa estrangulada es fácil de tomar.

8) La resección y anastomosis, cuando están indicadas, se hacen *En Condiciones Ideales* por esta via abdominal, sin restiramientos del mesenterio, con amplia movilidad de los cabos y fácil reintegración a la cavidad general.

9) La sutura del ligamento inguinal de Poupart a la cintilla ilio-pectínea de Cooper se hace bajo el control de la vista y el tacto. Se logr, pues, cerrar el anillo crural sólidamente. La sutura termina a una distancia tal de la vena femoral que ni la constriñe, ni deja espacio excesivo entre ella y el punto más lateral o externo de la sutura.

10) Si se juzga necesario, y las condiciones del paciente lo permiten, se puede ampliar la incisión peritoneal para revisar y tratar—dado el caso—lesiones intraabdominales coexistentes.

11) La seguridad con que se hace la sutura, y la solidez final de la misma, permiten la movilización y ambulación tempranas que, por lo general, son de la mayor importancia en el tipo común de pacientes des hernia crural.

Tecnica Operatoria. — La paciente es colocada en decúbito dorsal, con las rodillas flexionadas, y en posición moderada de Trendelenburg. La mesa de operaciones se inclina un poco lateralmente hacia el lado sano. Esto hace que las vísceras abdomino-pélvicas se alejen del sitio de la estrangulación.

El cirujano se sitúa en el *lado opuesto* al de hernia, como si fuera a hacer una laparotomía.

Se hace una incisión sub-umbilical media, o para-media, hasta peritoneo *Exclusive.* Se desliza suavemente la mano desde la línea media hacia afuera y hacia abajo en el plano extra-peritoneal hasta descubrir la fascia ilíaca. Este despegamiento no ofrece ninguna dificultad. El peritoneo desplazado se protege con compresas.

Se colocan dos separadores manuales de hoja larga (de Deaver, por ejemplo). El inferior, que es el instrumento más importante en la operación, tiene por misión desplazar la pared abdominal hacia adelante, hacia abajo y hacia afuera. Su extremidad debe llegar hasta los vasos epigástricos profundos. El otro separador, colocado más arriba, desplaza la pared abdominal hacia afuera.

En este momento se identifica el divertículo peritoneal herniario que entra al canal crural. Es fácil liberar toda la circunferencia del saco herniario.

Son perfectamente visibles, además del saco, el ligamento lacunar de Gimbernat, el inguinal de Poupart, la cintilla ílio-pectínea de Cooper, la fascia pectinea y la vena ilíaca externa, que, a este nivel, se convierte en la femoral, como queda dicho más arriba.

En caso de existir una arteria obturatriz anómala, se procede a ligarla inmediatamente.

De el volúmen y reductibilidad del contenido del saco herniario depende el que, para hacerlo pasar a través del anillo crural, se tenga que resurrir a uno de estos tres artificios:

1) Hacer una ligera tracción sobre el saco, hacia arriba.

2) Hacer un corte en el ligamento de Gimbernat.

3) Seccionar el ligamento de Poupart, cerca de la espina del pubis. Éste es un procedimiento de excepción.

En todo caso, nunca se deben hacer tracciones que puedan dañar el contenido del saco, especialmente si se trata de una asa intestinal. Igualmente, hay que evitar con todo cuidado que el líquido de exudado pase a la cavidad peritoneal.

Una vez liberado el saco, y debidamente protegido el campo, se procede a incindirlo y a exteriorizar el contenido, que se recibe en compresas húmedas calientes. Se deja transcurrir el tiempo necesario para estimar la viabilidad del intestino. Cualquier tratamiento que amerite el contenido herniario es incomparablemente más fácil y seguro de hacer, sobre todo una entero-esterostomía, a través de una incisión abdominal subumbilical. No hay tensiones innecesarias. *Se Trabaja En Condiciones Ideales.*

Una vez terminado el tratamiento del contenido, se reseca éste y se cierra la brecha peritoneal tan arriba como se quiera y sin ningún riesgo de dejar un divertículo peritoneal, que pueda ser el origen de una nueva hernia crural.

Se procede a obturar el canal crural mediante puntos separados de material [illegible]. Hemos usado hilo de lino No. [illegible]. Se colocan puntos separados —tres a cinco— que unen el ligamento de Poupart a la [illegible] pectínea. Hacia adentro se incluye en la sutura el ligamento de Gimbernat. El punto más lateral, o externo, se lleva hasta la vecindad inmediata de la vena ilíaca externa, obturando así total y precisamente, el anillo crural.

Se regresa el paciente a la posición horizontal y se cierra la pared por planos.

Resultados.—Hemos operado diez[6] casos de hernia crural por esta via de acceso sub-umbilical de Cheatle Henry.

En nuestra serie hubo nueve mujures y un hombre.

De los diez casos, en tres la hernia era reducible, en otros tres incarcerada y en los cuatro restantes estrangulada.

Se practicó resección intestinal con entero-enterostomía término-terminal en dos casos. Se hizo resección cuneiforme de una pequeña área del borde intestinal antimesentérico en dos casos (hernias de Richter). Se resecó un segmento de epiplón trombosado en dos casos. Finalmente, se hizo nada más reducción del contenido del saco en cuatro casos.

No hubo mortalidad operatoria en esta serie.

No hay hernias reproducidas en nuestros operados. El más reciente tiene veinte meses de haber sido intervenido.

En un caso hubo infección de la herida operatoria que, aunque no revistió gravedad, demoró dos semanas la estancia de la enferma en el Hospital.

SUMARIO Y CONCLUSIONES

1. La oclusión intestinal es causada en casi la mitad de los casos por una hernia externa.

2. De cada diez hernias estranguladas, cuatro son crurales.

3. Se señalan algunas de [illegible] la intervención del cirujano [illegible] las hernias crurales [illegible]

4. [illegible] crural [illegible]

mencionados para las otras dos y en cambio tiene las siguientes ventajas:

1) Permite intervenir sobre ambos anillos crurales por una sólo incisión. A este respecto hay que recordar que la hernia crural es bilateral en 20 por ciento de los casos.

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6) El saco herniario es ligado tan alto como se desee.

7) La decisión sobre la viabilidad del asa estrangulada es fácil de tomar.

8) La resección y anastomosis, cuando están indicadas, se hacen *En Condiciones Ideales* por esta via abdominal, sin restiramientos del mesenterio, con amplia movilidad de los cabos y fácil reintegración a la cavidad general.

9) La sutura del ligamento inguinal de Poupart a la cintilla ilio-pectínea de Cooper se hace bajo el control de la vista y el tacto. Se logr, pues, cerrar el anillo crural sólidamente. La sutura termina a una distancia tal de la vena femoral que ni la constriñe, ni deja espacio excesivo entre ella y el punto más lateral o externo de la sutura.

10) Si se juzga necesario, y las condiciones del paciente lo permiten, se puede ampliar la incisión peritoneal para revisar y tratar—dado el caso—lesiones intraabdominales coexistentes.

11) La seguridad con que se hace la sutura, y la solidez final de la misma, permiten la movilización y ambulación tempranas que, por lo general, son de la mayor importancia en el tipo común de pacientes des hernia crural.

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El cirujano se sitúa en el *lado opuesto* al de hernia, como si fuera a hacer una laparotomía.

Se hace una incisión sub-umbilical media, o para-media, hasta peritoneo *Exclusive.* Se desliza suavemente la mano desde la línea media hacia afuera y hacia abajo en el plano extra-peritoneal hasta descubrir la fascia ilíaca. Este despegamiento no ofrece ninguna dificultad. El peritoneo desplazado se protege con compresas.

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En caso de existir una arteria obturatriz anómala, se procede a ligarla inmediatamente.

De el volúmen y reductibilidad del contenido del saco herniario depende el que, para hacerlo pasar a través del anillo crural, se tenga que resurrir a uno de estos tres artificios:

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2) Hacer un corte en el ligamento de Gimbernat.

3) Seccionar el ligamento de Poupart, cerca de la espina del pubis. Éste es un procedimiento de excepción.

En todo caso, nunca se deben hacer tracciones que puedan dañar el contenido del saco, especialmente si se trata de una asa intestinal. Igualmente, hay que evitar con todo cuidado que el líquido de exudado pase a la cavidad peritoneal.

Una vez liberado el saco, y debidamente protegido el campo, se procede a incindirlo y a exteriorizar el contenido, que se recibe en compresas húmedas calientes. Se deja transcurrir el tiempo necesario para estimar la viabilidad del intestino. Cualquier tratamiento que amerite el contenido herniario es incomparablemente más fácil y seguro de hacer, sobre todo una entero-esterostomía, a través de una incisión abdominal subumbilical. No hay tensiones innecesarias. *Se Trabaja En Condiciones Ideales.*

Una vez terminado el tratamiento del contenido, se reseca éste y se cierra la brecha peritoneal tan arriba como se quiera y sin ningún riesgo de dejar un divertículo peritoneal, que pueda ser el origen de una nueva hernia crural.

Se procede a obturar el canal crural mediante puntos separados de material *no absorbible*. Hemos usado hilo de lino No. 1, o bien seda en madeja. Se colocan puntos separados—tres a cinco—que unen el ligamento de Poupart a la cintilla iliopectínea. Hacia adentro se incluye en la sutura el ligamento de Gimbernat. El punto más lateral, o externo, se lleva hasta la vecindad inmediata de la vena ilíaca externa, obturando así total y precisamente, el anillo crural.

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No hubo mortalidad operatoria en esta serie.

No hay hernias reproducidas en nuestros operados. El más reciente tiene veinte meses de haber sido intervenido.

En un caso hubo infección de la herida operatoria que, aunque no revistió gravedad, demoró dos semanas la estancia de la enferma en el Hospital.

SUMARIO Y CONCLUSIONES

1. La oclusión intestinal es causada en casi la mitad de los casos por una hernia externa.

2. De cada diez hernias estranguladas cuatro son crurales.

3. Se señalan algunas de las causas que posponen la intervención del cirujano en las hernias crurales estranguladas.

4. Actualmente, la mortalidad por hernia crural estrangulada es de 20 a 30 por

ciento y la frecuencia de reproducciones es de 10 a 20 por ciento.

5. A pesar de estos resultados no satisfactorios, se siguen empleando casinexclusivamente la via inguinal y la via crural para el tratamiento de la hernia crural, estrangulada o no Se mencionan los inconvenientes que tienen estas dos vias de acceso.

6. Se ennumeran las ventajas que tiene la via de acceso subumbilical, media o para-media, y se describe la técnica operatoria.

7. Se presentan los resultados obtenidos en diez casos personales, en los que no hubo mortalidad operatoria ni reproducción de la hernia, en pacientes tratados por esta via.

8. Pensamos que el procedimiento merece ser meditado[5] y puesto en práctica por un mayor número de cirujanos en México.

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◆

Sir William Fergusson (1808-1877), surgeon of the Royal Infirmary in Edinburgh and later Professor of Surgery at King's College Hospital, London, was one of the most brilliant and successful operating surgeons of all time. Between 1828 and 1864 he operated 400 times for harelip, with only 3 failures, and 134 times for cleft palate, with 129 successful cases.

Sir Thomas Spencer Wells (1818-1897) was a surgeon at the Samaritan Hospital, London, and the inventor of Spencer Wells' forceps.

—Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)

Editorial

Letheon:
The Cadenced Story of Anesthesia

CHAUNCEY D. LEAKE, Ph.D.
SAN FRANCISCO, CALIFORNIA

In living, all of us have suffered pain,
thus sharing intimately with each other
tense experience of that not-us,
and thus becoming one
through feeling in ourselves
what others may have felt
So much is pain!
Like death, it is for all of us,
but since it's not the end,
there is the hope
that there shall be no pain.
Ah, that it might be so!

In pausing now to think of those, who
through
the long and troubled years have shown
the many ways to still the birthright wail
of pain we suffer when we're sick,
to stop the anguish of the probing knife
which mercifully cuts away
the gangrenizing part which kills or
maims,
we have the pageant of our past to scan.

So that we may the better keep
in honored memory all who made
some hurt for us the less,—
too many may remain unnamed,—
now let us hear again
the what, the when, the where, the how.

So shall we justify a time of looking
backward,
even on relief of pain,
that, turning forward, we may find
and keep the path to its prevention.

During the forthcoming months of 1959 and as long thereafter as possible, the editorial pages of the Journal of the International College of Surgeons *will be occupied by presentations of rare and extraordinary historic value, the lectures presented at the International Surgeons' Hall of Fame on medical and surgical history from the earliest recorded achievements to those of our own times. We believe that Journal readers who were not able to attend the lectures will find them as exciting as did the audiences present at their delivery. The story of progress in the healing arts and the giants of medicine and surgery to whom we owe the amazing brilliance and scope of modern achievement is intrinsically thrilling and is a vital part of the education of every cultivated man and woman, inside or outside the profession. It is altogether fitting that it should appear in these pages, since the International College of Surgeons is first, last and always a teaching institution.*

For pain's not conquered, nor can it be,
until we lose adaptiveness in sense
and in response to that which is not-us.

So bearing pain, relieving what we can,
let us learn patiently the gentle way,
firm to prevent such anguish as we may.

What myriads have suffering lain in
patience
while they sought surcease:
the fallen tree-men,
fang-ripped hunters,
spear-pierced warriors,
stone-crushed builders,
all the hungry,
all the beaten and oppressed,
all the fearful with their head and heart
aches,—
these the healers tried to help.

Some bolder shaman may have understood
enough of pity to have tried to operate
upon a tribesman, who had been knocked
out
in fighting, or by accident, or purposely!

Everywhere men tasted this or that
in seeking what they might with safety
eat,
and learned what each might do
to bowel or head or heart.
What cooled the fiery, painful skin they
noted, too,
and learning, treasured deep and long in
memory.
So when desire rose to alter bowel,
to dull the ache of head or heart,
or soothe the flushed and irritated skin,
remembrance showed the way.

What Bacchic genius first found joy in
fruit juice
worked upon by warming sun?
Each tribe preserved the mythic hints
of earthy Dionysian secrets,
which suggested peace from frenzied
want.
Peace came with wines and human
sympathy.

The soothing voice and touch came first,
then food, and oily balm,
then skill, as taught by Imhotep,
to set the broken bone,
to calm the fiery skin,—
the quiet hand of Susruta,
the cooling lotions of Egyptian priests,
the wine Hua-Tu devised to stupefy with
hemp,
the skillful pressure on the nerves
and vessels to a limb,
or on the ones still called carotids,
arteries of sleep which pulse in neck,—
the Scythian hemp, the Memphic stone,
the *sama* of Hebraic surgeon-priests,
the Persian wines,
the temple-sleep in ancient Greece,
the vinegars of crucified,—
all these were known somewhere
to dull the hurt of injury.
And some were used to blunt the senses
when the healing priest performed his
rite,
or cut away the cancer or the rotted part
with stone or bronze scalpel.

The wines and beers themselves were
early found
to be of comfort in an agony,
and to them many herbs were added
by the priestly surgeons everywhere:
the lotus, lettuce, mandrake, poppy,
dock,
the henbane, hemlock, hellebore and
hemp,
verbena, primrose, myrrh and
frankincense,
the deadly nightshade, garlic, bhang,
datura, mulberry and rue,—
and half around the world,
where men learned also,—
kava, mescal, coca, and tobacco,—
these and many more kept secret,
unidentified,

comprise the ancient anodynes.

By words, by pictographs,
by writing on clay tablets and papyrus,
was the lore preserved,
and memory enlarged.

The names of wise physicians
came to be remembered:
Greek Hippocrates,
who so well told of fainting fits,
how best to heal a broken bone,
and so no harm;
and Dioscorides,
the surgeon, who, in Nero's time,
brought all the lore of drugs together
for a classifying,
each identified, discussed,
for preparation and for use.
He said, of mandragora,
"Some there are who boil the root in wine,
to give a glass in want for sleep,
or yet before an operation with the knife
or cautery,
that they may not be felt."
Here then is clearly note of anesthesia:
he even used that word!

The Roman Celsus wrote of tears of poppy,
made in pills with saffron, myrrh and rue:
a cooling anodyne to dim the flashing pain.

In the Middle Ages little surgery
survived.
Folk-lore on pain relief condensed
into the *spongia somnifera*,
which Theodoric used:
"Take opium, the leaves of mandragora,
ivy, seeds of dock,
the juice of mulberry, henbane, hemlock,
and boil with them a sponge,
which hold [illegible] before the nose of him
who will be cut,
until he falls asleep; then use the knife."

[illegible]
[illegible]

wine
to dull the hurt they knew
their knives or cauteries would cause.

Gilbertus Anglicus plied potent drafts of
opium,
but they were dangerous.
The skill of Guy de Chauliac was reversed,
but it was nullified by pus.
The war-won wisdom of Paré
revealed how helpful gentleness could be,
if it were blended well with skillful
surgery.

So British Clowes and German Wurtz
strove
in imitation of Paré
to lull the shrieking battle misery.

But all were baffled by the grinding agony.
Performing dextrous feats of surgery,
they had but death to offer
when their pity cried to put an end to
pain.

Rebellious Paracelsus wrought a minor
miracle
in urging his peculiar "laudanum,"
which he extracted from the poppy juice
with wine,
and kept a secret.
Yet it soothed much anguish.

Still stronger "spirits" got by mystic
Arab ritual,
when patiently distilled from potent wines,
more quickly gave a sort of anesthesia,
thus blasting hopes of alchemists
for life's elixir.

Now there came that brilliant Rhineland
youth,
Valerius, the son of Cordus,
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

anesthetic power in carbon dioxide
only came a century later,
when Ralph Waters in Wisconsin
marveled with us that 'twere so.

Thus now there was the knowledge and
the urge:
the way to bring the two together still
was to be found.
This called for art, for skill and
judgment, which
would make a demonstration clear to all.

The scientific effort showed what would
anesthetize,
the knowledge which could be applied
in order to achieve
the purpose urgently desired.
But still the know-how must be found,—
the engineer, the artist, dramatist,
who could successfully adapt
the knowledge to the purpose.

Soon the trials began.
Success was favored in frontier demands
for practicality.

In Boston, Collins Warren thought
of ether inhalations for relief
in pulmonary inflammation,
and many younger medicos had learned
to sniff at laughing gas and ether
for a frolic.
William Clarke of Rochester
was one of these.
His sympathy for pain
in toothache in his fianceé
suggested ether sniffing while
the tooth was pulled.
No pain was felt.

But Clarke thought little further on it,
and
said nothing more about it.
Yet, he's used the ether first for
pain relief in surgery!

In Georgia, somewhat later, Crawford
Long,
just back from Philadelphia, where
he learned restraint in medical affairs,
amused his friends one winter night
with sniffs of ether,
when they failed to find
some nitrous oxide for a laughing jag.
They had a gay affair,
and some were bruised,
but felt no hurt,
as Long observed.
Hence, soon he used the ether surgically,
removing tumors from old Venable's neck
(two dollars charge for surgery,
a quarter for the ether),
thinking nought of telling others,
saying nought of what he'd done,
till others showed the way to do it.

Two years later, Hartford's Horace Wells,
a young and modest dentist,
saw the Gardner Colton well-staged show
of laughing gas.
The subject bruised himself,
but felt no hurt.
Next morning Wells had Colton give
him nitrous oxide, while John Riggs,
a colleague, pulled a tooth.
There was no pain.

Wells used the nitrous oxide right away
in practice, pausing not
to study how to give it best,
but urging all excitedly to try it.
He considered other chemicals also,
and told his partner-pupil what he did.

This pupil, William Morton, was
aggressive.
Wells, in Boston, asked
the best known surgeon, Collins Warren,
to permit
a demonstration for his staff
at famous Massachusetts General Hospital.
Here the best of newer medicine
was practiced.
Trained in Paris by the masters,
Louis and Magendie,

many Boston medicos were critical
and cautious.
Wells was brash.
He did not know precisely how
much nitrous oxide patients must inhale
to be insensible to pain.
His boyish subject screamed:
the crowd then jeered at Wells,
and called him humbug.

He retired chagrined
that he had failed to demonstrate
what could be done so easily
to stop the pain of surgical procedures.
This fiasco Morton watched.
A student in the School of Medicine, he
was also making sets of teeth
and practicing at dentistry.
With Wells, he had developed new
and better dental solders, aided by
erratic Charles T. Jackson, his preceptor,
who
was chemist, scientist, geologist,
and who had claimed the credit for
telegraphy from Samuel Morse.

Now Morton tried with Wells to sell
their better dentures in a larger way.
But fear of pain in pulling rotted teeth
kept customers away.
And Morton was not satisfied with
laughing gas,
and he and Wells drifted apart.

It was a restless age.
Depressions stirred unrest, and men
moved west,
from Europe to the States,
and on to California, Oregon and Texas.
Wars arose, and gold was sought.
It was a time of vicious competition;
none afforded generosity, nor could.

Young Morton was ambitious; he had
married.
He [illegible]
[illegible]

to pull a tooth, and snatched at any hint
which came from Jackson. One, to put
some ether on the aching tooth, he tried,
and then he thought to give enough
by inhalation to prevent
whatever pain might be,
however long the operation.

Experimenting feverishly on animals at
home,
on patients in his office, he
soon learned the dose to use.

He wangled Collins Warren for
an invitation to appear before
the Boston surgeons in the same
old amphitheater where Wells had failed,
and there to try to demonstrate
his new invention which could blunt,
he thought, the biting edge of pain.

One may wonder whether Morton realized
what he proposed to do.
We know with what compassion Hickman,
Long,
and Wells had sought to mitigate
the piercing agony of surgery.
Was Morton cold and merely striving for
success and all that fame could bring?
Some touch of pity must have stirred him
when
he saw the racking pain at operation.

It usually required four strong men
to hold a patient when the surgeon's knife
approached.
Though stupefied with opium or drunk
with gin,
the patients shrieked with anguish,
groaned in agony,
and struggled with convulsive misery,
while sweat rolled from their blanched
and fear-drawn faces, as the surgeon [illegible]
with lightning strokes, or [illegible]
or by
[illegible]

[illegible]

Calloused students vomited
and could not stomach surgery,
and only the most desperate or acutely
injured
would submit to operation.
Pain was commonplace all over earth,
evolving both with time and man.
Yet with the hopes of freedom
came a freshening dignity for man,
and life became more precious as
compassion grew beside religion,—
to bring an end to slavery and pain.

Yes, Morton must have known what he
proposed to do.

It seems that Morton understood that
much depends
upon the way that ether is administered.
He tried a funnel-like inhaler, which
was criticized by Doctor Gould, his
landlord.
Morton had a new improved inhaling flask
prepared
the very fateful morning when
the demonstration was to be.

His fellow students thronged the lecture
room,
excited at a chance to scoff again.
The patient, Gilbert Abbott, thin and pale,
was shown by Collins Warren,
most respected of the surgeons.
The doctors closed around to note
the bulging tumor on the jaw.
Hayward, Townsend, Henry Bigelow and
Gould
were there, in long street coats, as usual.
The ritual of asepsis was not yet conceived,
though Oliver W. Holmes, anatomist, and
poet,
who decried the dirt that caused infection
in delivery,
perhaps was in the room,
to plan experiments which he described
long afterwards.

Morton failed to come at ten o'clock,
the appointed time.
"As Doctor Morton has not yet arrived,"
said Collins Warren,
"I presume that he is otherwise engaged."
Just as a raucous laughter followed
Warren's jibe,
young Morton entered out of breath
from rushing up the several stairs,
the new inhaler in his hands.
He made his preparations while the
doctors
strapped pale Abbott to the red-plushed
chair.
Then Warren said, "Well, sir, your
patient's ready."
Morton coolly asked of Abbott if he were
afraid.
"I feel," said Abbott, "confident,
and I will do precisely what you tell me to."
Then Morton had him breathe by mouth
the contents of the flask.
He flushed and twitched his arms and legs,
as all had seen in ether frolics.
At these signs in ether jags,
the bottle was to be withdrawn, as learned
texts advised,
because the vapors might be harmful.

Morton held the inhaler close to Abbott's
mouth
for many tense and silent minutes,
till he seemed to be asleep, with quiet
breathing.
Morton said to Warren,
"Sir, your patient is prepared."
As Warren slashed with dextrous hand
into the tumor,
silence startled all.
There were no shrieks, no violent strife,
as usually occurred.
There was merely quiet gentle breathing
as in peaceful sleep.
In silence and in awe they watched the
Death of Pain
and were convinced.
Said Warren, "Gentlemen, this is no
humbug."

When the blood was washed away, and
Abbott wakened,
Morton asked what he had felt,
and he was vague, remembering nothing.
Morton did not tell what he had used.
Next morning all of staid old Boston was
excited,
for the news was in the papers,
and another demonstration had been made.
Yet Morton did not tell what he had used.

There was confusion.
Morton was evasive. He talked anxiously
with Warren, Bigelow and Gould.
They knew that it was ether that he used,
and they agreed that it was his invention.
Warren years before had recommended
sniffs
of ether to relieve the hacking cough
of phthisis, and diseases of the lung.
He recognized what Morton used.
Jackson, agitated, claimed a share of
credit.
He and Morton filed for patent, Morton as
proprietor.
They both desired fame and profit.
All of those concerned were young,
and though they sought the generous way,
they had to get whate'er they could to live,
and who was generous to them?

The hospitals refused to use the new
procedure,
until Morton, showing overmuch concern,
assigned a license to them.
Then he said that he intended merely to
prevent abuse,
by patent right, but he sought license fees
alike
from hospitals and dentists.

Of publications, first Smilie's note
appeared
upon insensibility from vapor of an ether
[illegible]
Then there came the [illegible] article by
Bigelow,
[illegible]

but admitting his own failure to produce
insensibility through ether by itself
(perhaps the sample used was old,
impure),
thus adding to the dark confusion.
He reviewed the past accounts of ether
inhalations,
where the dangers were observed,
described the several operations with the
Morton method,
noting well the various imperfections,
due, as we think now, to lack of knowing
what the dose-effect relations are,
concluding with a note in which he
justifies
the claims for patent through desire to
prevent abuse.

Then promptly Morton mailed a circular
around,
and gave the name of "Letheon"
to what he had prepared.
But still he did not tell what he had used.

Then J. F. Flagg protested well the patent
claim
and there was sharp debate,
which Philadelphia doctors joined.
Condemned by some,
by many thought too dangerous,
as Wallace in New York disclosed
explosibility,
the Letheon was tried,
and judged increasingly effective.

Much more surgery was done.
Admittedly the ether fostered skill,
and more was used,
dispute maintaining interest.

Now Jackson sought the credit for
himself,
and wrote to scientists in France,
[illegible] false to Morton, [illegible]
[illegible]
[illegible]
[illegible]

using ether in an amputation,
but the patient died from fever,
making Joseph Lister think of how to stop the sepsis.
Thus the word of ether spread,
and much discussion rose
in public and professional press.
In Russia, Pirogoff devised new ways
of giving ether, while in France
debate occurred about its value.
Wells in Hartford was disturbed
and pressed his claims for nitrous oxide.
In the midst of winter storms he made
the rough long ocean trip to London and to Paris,
but to no effect.
He had no influential friends,
was young, impetuous,
and could not warm
the cold austerity of scientific smugness.

Morton sent around a flood
of advertising tracts prepared with skill,
containing many words from friends,
among them being some from Holmes
reviving "anesthesia" as a proper term
describing well the new technique.
Morton also wrote with care and dignity
for benefit of scientists in France,
but Jackson's notes and influence
and Wells' visit were against him.

Laughing at the interest
in ether, shrewd French surgeons
used it well and paid no heed
to rival claims for fame.

No system was at hand to aid
the orderly development of drugs;
Indeed, such major efforts with new drugs,
as are so commonplace today, take their example
from success obtained when E. R. Squibb produced,
in inexpensive bulk, an ether
standardized for inhalation anesthesia.
In Morton's time there was confusion over ether.
Some used "chloric ether," which we now believe
was ethylene chloride, not uniform in quality
nor suited for anesthetizing.
Sulphuric ether, as first made by Cordus, had to be
prepared with care and purified,
as Morton learned from Jackson,
if successful anesthesia were to be secured.

With each determined tensely on
his own ambitious glory-hunt,
without a chance at reconciliation,
Morton, Jackson, Wells,
the three who had been friends,
became the bitterest enemies,
when there was fame and means
enough for all to share.
The controversy stormed through years of tragedy.

While in New York, alone,
Wells slashed his veins
in shame of failure,
when he realized his halting notes were unconvincing,
when he knew he'd compromised himself.

When patent profits failed, young Morton's friends
proposed a grant from public funds
as recompense for public benefit.
Discussion rose again, this time in Congress.
Harsh and detailed arguments were made,
reports filled many unconvincing pages,
and many testimonials appeared for Morton.
Truman Smith defended Wells,
and Jackson had his say through Lord and Gay.
Let credit be to Jackson, when
he heard of Crawford Long,
that he withdrew his claim.

When Long, though needing funds,

refused consideration of the grant,
debate in Congress ceased.

In Edinburgh, James Young Simpson,
seeking pain control in child-birth,
found that ether would not do as well as
he desired.
It acts too slowly.
Something rapid in effect he wanted,
something powerful to meet the sudden
cramping ache.
For months he sought a better agent.
Busy days left only time at night:
around the great long table in the dining
room
he studied after dinner, testing many
vapors
on himself and Keith and Duncan,
while their academic friends,
attracted by the ground-floor lights,
would visit with them.
Sturdy Scot, and independent,
Simpson, large of head but little-legged,
already was in wordy argument
upon obstetrical statistics and on pain
relief.

The Lancet fostered critical discussion:
there was much on anesthesia,
and Simpson watched the rival claims of
Wells and Morton.
He wrote much, the while he sought a
better ether.

Once he thought about a talk he'd had
with David Waldie, chemist friend from
Liverpool,
who had advised a new
and heavy liquid, chloroform.
In a corner cupboard, Simpson found
a sample which he had received
some little while before.
All three [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

was an angel,
they agreed they'd found
a better letheon than ether.
So with promptness, Simpson learned the
dose to use,
compared the chloroform with what he
knew of ether,
tried it on his patients,
found it worked as he desired,
found it lightened the most burdensome
deliveries,
and he was greatly gratified.

At once he published his reports.
Then vigorous debate arose again,
and long continued,
on the merits of the letheonic drugs.

Chloroform had been devised by Samuel
Guthrie
in New York some years before,
and he observed its stupefying danger.
Souberain and Liebig also made it,
while Dumas in Paris standardized it.
Flourens in experiments on animals
remarked upon its anesthetic power
several months before its value was
revealed
by Simpson's demonstration.
Channing's brief for ether for the pains
of labor
was pedantic in the face of Simpson's
eager brilliance on chloroform.

Indeed, the firm assuredness of Simpson
was so weighty and convincing
that the British presently displayed
a preference for chloroform
in every kind of operation.

[illegible] Simpson's
chloroform
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

But he prevailed by silly argument
that God Himself approved of anesthesia,
since He had set the precedent by giving
sleep to Adam at the birth of Eve.
When later he was knighted, friends proposed
a coat of arms, a naked babe, with motto,
"Does your mother know you're out?"

Victo dolore was the epigraph
which Simpson chose in joy of doing.
Simpson was articulate.
He wrote convincingly, he had the facts.
The tracts of Wells and Morton
on the three anesthetizing drugs were weak
compared with Simpson's clear analysis,
and Jackson's later effort was no better.

With Simpson's stimulus, advance began in Europe.
Om'nously and tensely, th' approaching civil strife
distracted what young scientists we might have had,
and devastated utterly their intellects.
Wells had killed himself,
and Morton strove to vindicate himself
'gainst Jackson, who was judged insane.
Some chance announcement, praising Jackson,
drove the angered Morton into fatal stroke
in Central Park, New York.
Impoverished by Civil War,
Long died with dignity,
his final act relieving pain in childbirth.

Monuments were made for all,
save Jackson, who does not deserve one.
To commemorate the vict'ry over pain, there stands
a shaft in Boston with little lettering upon it,
since no one agreed on whom the fame should rest.
Sly Holmes proposed to carve on it,
"To e(i)ther,"
thus to close the argument.

It was Warren's weight, with Jacob Bigelow's letter
in *The Lancet*, which aroused the English
to investigate the many ways of anesthesia.
Steady patient toil resulted in John Snow's reports,
which gave details of doses and effects,
defined "degrees of narcotism,"
which later Arthur Guedel classified
more helpfully in "stages."
Snow warned sharply of asphyxia,
which he had studied previously.
He made inhaling masks with valves,
and soon become the first professional anesthetist,
enjoying confidence of Queen and all.

Then Thomas Nunnely began the systematic search
of chemicals for pain-relief,
and even noted ethylene.
He also introduced the use of mixtures.
But his search was fruitless,
as many others were to be.

Snow's pupil, Benjamin W. Richardson, renewed
the systematic search of chemicals for pain relief.
He introduced the ether spray
for local cold to blunt the pain of minor surgery.
The alcohols were studied, many hydrocarbons, too,
and one, the gaseous ethylene,
he found was safe,
but no machine availed for giving it.

When Clover made efficient gas inhalers,
they were used for chloroform and ether.
They later were improved by Hewitt,
using cylinders for nitrous oxide under pressure.

Meanwhile in France, great Claude
Bernard
proposed a theory for narcotism,
reversible coagulation of the protein of
the cells,
and emphasized the way
that anesthesia may simulate asphyxia.
He analyzed depression of the nervous
system.
He suggested morphine prior to inducing
anesthesia.
Oxygen he showed was needed to prevent
asphyxiation.

Nitrous oxide was revived by Gardner
Colton,
who had used it first for Wells,
and who was wise, well-travelled,
practical,
but inarticulate.
But Edmund Andrews of Chicago,
adding oxygen, had made it safe.

Now death from chloroform was
frequent.
Many chloroform commissions made
reports on how it acts,
by liver damage, vagal stoppage of the
heart,
and atropine came into use to paralyze the
vagal ends.

And then another anesthetic way was
found.
This came when Sigmund Freud resolved
to treat
a morphine addict by a nerve-stimulating
drug
to act against depression from morphine.
He told his interne in Vienna to investigate
the new-found drug, cocaine,
which had been said to stimulate.
[illegible]
[illegible]
He [illegible]
[illegible]
[illegible]

where inhalation anesthesia is bothersome.
As soon as he had put cocaine to tongue,
as others did, the interne knew
the numbness came from block of sensory
nerves.

Experiments on animals soon taught how
much to use,
and prompt success resulted in the clinic.

Koller's German note was read by surgeons
round the world, and strong solutions of
cocaine
came into general use for local anesthesia.
In Baltimore Halsted devised nerve block,
and Corning made a way for spinal
anesthesia.
But cocaine was found to be addictive too,
so stimulus was given to a search for
something safer.

Cocaine's use for local anesthesia was
not new.
For how did Incan Shaman cut the skull
away
to get relief from pain of pressure
from the crack of stones from battle
slings?
Maybe, as Moodie said, he chewed on coca
leaves
and let saliva drop on injured part
the while he operated.

Better drugs for local anesthesia were
devised
as soon as Willstatter had found
the key to cocaine's chemistry.
Fourneau developed stovaine,
Einhorn proposed procaine, and many
more
have been exploited speciously
with profit factors weighing more than
scientific.
Schleich discovered that dilute solutions
[illegible]
[illegible]
[illegible]
[illegible]

Koller had no part in this.
He practiced long and well,
New York's own ophthalmologist,
but gained no recognition for the vast
relief from pain his finding brought.
'Tis trite to say that someone else would have
discovered local anesthesia right away if Koller hadn't.
He deserves some fame,—not quite
as much as movie star or gangster, maybe.
Values are as relative as time.
Of this be sure: Carl Koller earner his way
alone with dignity, and was content.

Revived were other ways of local pain relief.
Paré, Valverdi, James Moore had put pressure
on the vessels to a part or to the nerves,
while Avicenna, Severinus, Baron Larrey
used the cold of ice and snow for anesthesia.
Refrigeration now is vogue again
with startling packs of ice for amputation.
Meanwhile the ethyl chloride spray
was introduced in Switzerland by Paul Redard
for local freezing of the skin for lancing.

Many combinations of narcotic drugs had long been used.
The German, Steinbuchel, proposed a new one:
hyoscine and morphine for the "twilight sleep" of childbirth.
This enjoyed exploited vogue.
We've learned again, through Grantly Read,
that tension adds to throes of labor.
Cleveland's Crile proposed "anoci-association,"
a combination of a general with a local anesthetic
to prevent the shock of operation.
Many combinations and sequences of the anesthetic drugs
may be devised according to the needs of patients.

Growth of knowledge in regard to anesthesia
brought the benefit of technical improvements,
which added further to success.
Rudolf Matas made spinal block effective;
J. T. Gwathmey's skill attracted wide attention;
Harvey Cushing added safe control
by introducing record charts
to follow change in pulse and respiration.

Interest arose in metabolic shifts
produced by anesthesia; the water loss,
the fall in alkali reserve, with disturbances
in carbohydrate balance, the phosphate loss
which Stehle found, the liver damage
emphasized by Bourne in Montreal,
effects produced by carbon dioxide
as shown by Yandel Henderson,—
consideration of these matters
helped improve the care of patients,—
as when William Thalhimer, in studying these
new factors, introduced the use of insulin
with glucose intravenously to stop
postanesthetic nausea.

The Scotsman, William MacEwen, with Franz Kuhn,
applied Vesalius' old experiment
of blowing up the lungs, to show the way
to make thoracic surgery successful,
through tubing for the trachea, which was
skillfully improved by Waters and Guedel.
Much effort came on gaseous tensions,
which had been well studied by Paul Bert,
who never knew how much his work might mean
to aviation and to anesthesia.

Complex effects are caused by anesthetic drugs,

as Walter Meek and Robert Allen
emphasized,
on kidney flow, on laryngeal spasm, on
heart,
on respiration, Barcroft's curves of CO_2
and oxygen
blood saturation, on cellular membranes,
on viruses,
metabolism, endocrines, carotid sinus,
enzymes,
nerve response, with interesting block at
first
of sensory fibers, then of motor ones,—
all these effects, and many more have been
well measured with respect to dose and
time,
and ways were found to counteract
or to prevent those not desired.

A host of stimulating drugs are known,
and many can be well applied to vivify the
comatose,
as caffeine, CO_2, metrazole, and benzedrine.
Behold, what scientific wealth of data
those who have the wit may spend,
and evermore accumulate!

New anesthetic drugs were found, or were
revived;
Arno Luckhardt, Isabella Herb, and J. B.
Carter
in Chicago, once again discovered ethylene
is not a dangerous drug for animals,
as it is for plants, but rather is a smooth
anesthetizing agent, capable of being given
with enough of oxygen that no asphyxia
occurs.
This was confirmed at once and
independently
by Henderson and Brown in Canada.
But ethylene explodes, and accidents
occurred,
which led to safer ways for [illegible]

[illegible]
[illegible]
[illegible]

by removing CO_2 as formed, and adding
oxygen as needed. This led Ralph Waters
to devise successfully the helpful
carbon dioxide absorption method.
Jackson also introduced trichloroethylene
for quick and brief anesthetizing.

Velyen Henderson and Lucas found
powerful
depressant action in cyclopropane,
which Schmidt and Waters carefully
developed
to a safe efficient anesthetic gas.
Guedel and Knoefel, Chen and Ravdin
discovered that divinyl ether is as
prophesied,
a rapid acting useful drug for anesthesia.
Here at last had science triumphed in
predicting
what a drug might do on living things
before it had existence.
J. C. Krantz was thus impelled to search
for other anesthetic ethers.
Abreu, Marsh and Peoples sought
a better non-inflammable
halogenated hydrocarbon
than chloroform, for anesthesia,
but with no success.
But Krantz succeeded, by
the use of fluorine derivatives,
and on the side
found useful agents for
convulsive shocking in psychoses.

Thus were all depressant agents to be
scanned
again for anesthetic hints: there was no
interest
in standard drugs like chloral hydrate,
salts of bromine or magnesium,
paraldehyde or urethane,
there had to be [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

trichlorethanol,
which is quite as useful, was neglected.
But tribromethanol in amylene
was well reported on by Eichholtz for
a rectal administration, and it was widely used.

There came the overwhelming flood of barbitals.
The chemist, Emil Fischer, first devised
urea malonyl compounds, and named
the type one "Veronal" from the city of Verona
where he was when word arrived that
it had acted as desired.
It also was exploited.
Many ways were found by young American
inventors to produce new drugs from it.
These all comprise the barbitals, and they
were used for anesthetic action by the veterinarians.

John Lundy found that anesthesia by vein
is practical provided that the drug will act
within injection time and be excreted quickly.
Such a drug the Russians sought for years before
and thought they'd found in "hedonal."
But it was far too toxic.
Now the many barbitals gave chance for patient search
to get the best one suited for the purpose.
"Pentothal" seems best right now,
in battle tried with much success.

Then Arthur Tatum, Peter Knoefel, found
that barbitals protect against all toxic
local anesthetic drugs, and that they may
be used to calm the anxious patient to prevent
untoward reactions with an irritable heart.
Again it is recalled that relaxation
with relief from fear may lower sense of pain,
and aid in psychological adjustment,
as Paul Blood suggested years before.

Not every plan for better drug has been achieved:
once great to-do was made
for nonaddictive substitutes for morphine,
None exist nor can.
The National Research Council wagered much
on holding pain relief can be divorced
from craving, but it lost.
For all the pain-relieving drugs provide
desired escape from what cannot be faced
with dignity to self.

So all the alcohols, the morphines, barbitals
became addictive drugs, and so do those,
cocaine-like, which may give the feel
of courage, not the stuff itself.

Much needed aid to work in pain control
has come in recent years.
The Frank McMechans started special journals,
took long journeys, under handicap, from their home in Cleveland,
to cheer anesthetists around the world.
Paul Wood gave impetus to make
a specialty of anesthesia.
The surgeons learned that specially trained
anesthetists are helpful to success.
Anesthetists were organized,
professional standards rose,
to further craft and skill for patients' benefit.
Ralph Waters started training courses at Wisconsin
whence skilled anesthetists
have gone to all the world;
where plans for future anesthetic engineering,
as proposed by Noel Gillespie and O. S. Orth,
give hope of greater benefit.
John Lundy gave great stimulus
with articles and text,
and basic studies on pain conduction

and the mechanism of anesthesia
began in England, Germany and here.
John Adriani's texts, neatly and well
devised, were boon
to nurse anesthetists striving to
perfect their gentle art.

Do we know yet what anesthesia is?
By age-long trial we've found a way
to ease some pain, not knowing what
pain is.
How then know anesthesia?
Hans Meyer, C. E. Overton revealed that
most
of nerve-depressing drugs will concentrate
in fatty nervous sheaths because they are
more soluable in fat than water.
Winterstein proposed that anesthetics
seem
to act by slowing oxidation in the cells.
As more is learned how enzymes act
there may be more to justify this thought.
Quastel and Emerson have shown
the difficulties in exploring these ideas
with methods now available.
John Field, in well reviewing enzyme
concepts
in relation to narcosis, points
the way to further knowledge and belief.
Ralph Lillie emphasized effects of
anesthetics
on the surfaces of cells, suggesting that
the permeability reactions alter vital acts.

David Nachmansohn describes
how nervous impulse
follows acetylcholine
formation and destruction,
while electron movement
can be measured in the action current.

So they may stimulate
experiment to further knowledge of
the energy exchange in nerve and brain,
and thus improve control of pain.

[illegible]

some have studied sleep,—
that happy state wherein we spend
a third of life, nor know the how.
Here Russian scientists,
as Sechenov showed, long ago,
that the brain
inhibits reflex activity,
and his pupil, Pavlov, well
began the study of conditioning.
Nathaniel Kleitman saw the way
that muscle relaxation favors sleep,
that every sleep-producing drug
first lowers muscle tone.

Often muscle relaxation is essential
for success in surgery.
Curare, that strange arrow poison
studied by
Bernard, is used with anesthesia
for muscle relaxation, thus avoiding
coma dose
of anesthetic drug.
In the chemistry of curare are
ten carbon atoms in a ring;
So decamethonium compounds could
be made to act as surgeons want,
relaxing muscles swiftly and for
a short time only. Succinyl choline,
whose structure corresponds,
is widely used, but David Marsh
made others still more promising.

So experiment, debate goes on,
and we are learning some of pain itself.
Thus Joseph Erlanger and Herbert
Gasser
showed relationships between the kind
of nervous sheath and speed of pain
conduction.
Henry Head had fully mapped the nerve
supply
to all the segment areas of pain.
The threshold stimuli for pain,
as measured now by [illegible] and Wolff,
afford the data needed to [illegible]
[illegible]
[illegible]
[illegible]

In analyzing what we know of pain,
attempt is made to separate
the "feeling state," of "quale,"
from what specific space-time factors
  may
be quantitated. This demands
duality of matter-mind relationship,
and is opposed to evidence
accumulating rapidly that all
which we call "mental" is, in fact,
a space-time adaptation of
associated atom-energy complexes to
environments from which they came,
and to which they will return.

That fermentation is a sort
of subtle respiration Pasteur showed;
then Meyerhof and Warburg worked
on respiratory ferments, paved the way
for later studies on effects on enzymes
of the various anesthetizing drugs.
The enzyme choline esterase is thought
  by some
to mediate the nerve impulse by energy
  exchange
in making, then in splitting, acetylcholine,
electrical effect along the sensory
or motor nerve appearing at the time.
Now this effect of choline esterase is
  blocked
by anesthetics of all kinds.
But how does this occur?
And so the search goes on.
The more we learn of cells, their physical
reactions,
their dynamic steady states,
the vast and complicated ways their
  chemistry proceeds,
the more we'll know of pain,
and how it is relieved.
The radioactive isotopes may help locate
  the action
of the old and well-known anesthetic
  drugs.

And so the search goes on,
revealing more of Nature's shy and
beauteous self.
And as the story's told by Thomas Keys
and many others,
it is impressive.

Thus in another time of looking back
on pain control, we'll have so much
the more to think about.
For pain's not conquered, nor can it be,
until we lose adaptiveness in sense
and in response to that which is not-us.

So bearing pain, relieving what we can,
let us learn patiently the gentle way,
firm to prevent such anguish as we may.

Yet calmly now, the story told, one asks
whence anesthesia, when such sadists we?

◆

Editors' Note: It has been brought to our attention that certain semantic and syntactic errors appear in the German articles of the double-issue Journal (November and December) commemorating the First Congress of the European Federation of the International College of Surgeons, held in Brussels in May 1958. Needless to say, the Editorial Board is deeply regretful. We offer sincerest apologies to all concerned, in the hope that our readers will understand the tremendous effort involved in preparing and presenting these two unusually large issues within a limited time.

New Books

BOOKS RECEIVED

The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Proceedings of the Third National Cancer Conference, Detroit, Michigan, June 4-6, 1956. Sponsored by the American Cancer Society, Inc., and National Cancer Institute, U. S. Public Health Service. Philadelphia: The J. B. Lippincott Company, 1957. Pp. 961.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Pathology and Surgery of the Veins of the Lower Limbs. By Harold Dodd and Frank Cockett. Baltimore: The Williams & Wilkins Company, 1957. Pp. 462, illustrated.

Spinal Cord Compression. By I. M. Tarlov. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 147, with 41 illustrations.

Functional Bracing of the Upper Extremities. By Miles H. Anderson. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. [illegible]. Illustrated.

Diagnostic Clinique Pronostic et Traitement des Tumeurs Benignes et Malignes (Clinical Diagnosis, Prognosis and Treatment of Benign and Malignant Tumors). By [illegible] Paris: G. Doin et Cie, [illegible]

The Clinical Management of Varicose Veins. By David Woolfolk Barrow. New York: Paul B. Hoeber, 1957. Pp. 167, with 70 illustrations.

The Story Behind the Word: Some Interesting Origins of Medical Terms. By Harry Wain. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 342.

Homosexuality, Transvestism and Change of Sex. By Eugene de Savitsch. London: William Heinemann Medical Books Ltd., 1958. Pp. 120.

Texas Surgeon. By Donald T. Atkinson. New York: Ives Washburn, Inc., 1958. Pp. 180. *Reviewed in this issue.*

The Roentgenographic and Clinical Picture of the Healthy and the Diseased Spine. By G. Schmorl and H. Junghans. Stuttgart: George Thieme Verlag, 1957. Pp. 350, with 419 illustrations. *Reviewed in this issue.*

The Operation. By Leonard Engel. New York: McGraw-Hill Book Company, 1958. Pp. 277, with diagrammatic endpapers. *Reviewed in this issue.*

Human Dissection: Its Drama and Struggle. By A. M. Lassek. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 310. Illustrated. *Reviewed in this issue.*

Chirurgica Geriatrica (Geriatric Surgery). By Gian Carlo Parenti and Mario Fabi. Turin: Edizioni Minerva Medica, 1958. Pp. [illegible]. *Reviewed in this issue.*

The Physiology and Pathology of the Cerebellum. By Robert Stone Dow and Giuseppe Moruzzi. Minneapolis: University of Minnesota Press, 1958. Pp. 675, [illegible]

Martius' Gynecologic Operations [illegible]

Duodénum et Pancréas (Duodenum and Pancreas). By Guy Albot and F. Poilleux, with the collaboration of sixteen Staff Members of l'Hôtel Dieu. Paris: G. Masson & Cie, 1956. Pp. 296, with 126 illustrations.

In 1952 the authors began publishing monthly conferences on various diseases of the gastrointestinal tract in which surgeons, roentgenologists, pathologists, biologists and others took part. The first was a volume on diseases of the bile duct; the second, in 1953, was on the stomach; the third, in 1954, was on the liver and portal vein, the fourth, in 1955, was on the small intestine. In the current volume on diseases of the duodenum and pancreas, diagnosis and treatment were brought up to date.

In dealing with megaduodenum the authors point out that it may be due to congenital malformation, extrinsic pressure due to carcinoma of the adjacent organs, adenopathy, duodenojejunal bands, etc. In addition, functional disease due to vagosympathetic disturbances results in paralytic stasis associated with spasm of the duodenal bulb sphincter. They state that tumors of the ampulla of Vater can be diagnosed only by roentgen ray and should be treated by surgical extirpation. There are 19 excellent roentgen films depicting these conditions.

A chapter is devoted to the rôle of the three sphincters of the duodenal loop in the symptoms of diseases involving organs of the right upper abdominal quadrant (carrefour). The anatomic aspects and functions of these sphincters are studied, including radiomanometric and cholecystographic (with and without duodenal intubation) studies, and described. The authors' recent studies have led to revision of the concept of duodenal physiology. The general, remote and local etilogic factors in diseases of the duodenal sphincters are presented. The authors emphasize the rôle of bilidigestive synergy, which may explain failures of certain gastrectomies, and bilidigestive anastomosis. Postoperative bilidigestive spasm is described. Changes in the technic of anastomosis, including drainage of the gallbladder and anastomosis of the bile duct with the duodenum or, preferably, with the jejunum in some cases, are discussed.

There is a chapter on the postgastroenterostomy and postgastrectomy syndrome, physiologic suppression of the duodenum, vicious circle phenomena, defective function of gastroenterostomy opening, jaundice, etc. The authors advocate routine examination of the duodenal ring in all ulcer patients prior to gastrectomy; in certain instances of spasm of the duodenal sphincters the prognosis should be guarded; in others, gastroenterostomy should be substituted for gastrectomy.

One hundred and forty-two pages are devoted to the exploration and treatment of diseases of the pancreas. The various functional tests of pancreatic secretion in cases of acute and chronic pancreatitis are described; the quantity secreted in the blood, urine and stool, and that collected through a duodenal tube. Among the tests listed are those of Trémolières, West and Althausen. Examination includes splenoportographic study, catheterization of the pancreatic duct, transduodenal papillary pancreatographic study, etc. Catheterization permits examination of the secretion as well as dilation of a constricted duct that may be causing obstruction. Puncture biopsy is recommended in some cases.

There is a chapter on lithiasis of the pancreas and pancreatic duct. In the diagnosis of lithiasis, the authors state, it is difficult to distinguish between stones of the duct and calcareous pancreatitis (a latent affection often overlooked). Diagnosis is made by evaluating the clinical symptoms, physical examination, Mallet-Guy's sign, roentgen study, glycoregulation, etc. There are excellent splenoportograms and pancreatograms. The various surgical interventions described include pancreatolithotomy, as well as other operations on the bilidigestive tract and nervous system. Interesting cases of calculus of the pancreatic duct and pancreas are reported by Dupuy, Leger, Edelmann, Vallin and Grosdidier.

The chapter devoted to pancreatitis without obstructive jaundice considers various symptoms, viz., pain and the clinical syndrome of pancreatic insufficiency and gastrointestinal hemorrhage. Left segmental and diffuse pancreatitis and the various types encountered in infants are discussed. The difference between infants and adults in the clinical picture of chronic pancreatitis is pointed out. Excellent photomicrographs demonstrate the characteristic appearance of fibrocystic disease, interstitial pancreatitis, etc.

Another chapter discusses the rare true cyst and the relatively common false cyst of the pancreas. They are often associated with calculi and have caused obstructive jaundice by pressure on the bile duct, gastrointestinal hemorrhage or perforation. Operations include cystojejunostomy, marsupialization, etc.

The last chapter lists five classes of pancreatic hypoglycemia and discusses the importance of surgical measures in its treatment. The authors describe the differential diagnosis between adrenal, hypophyseal and hepatic insufficiency. Hypoglycemia in the infant and medical treatment of pancreatic hypoglycemia are brought up to date.

This fifth volume is a compilation of conferences conducted at l'Hotel Dieu, Paris. It deals with diagnostic procedures developed over the years, which facilitate the treatment of obscure diseases and lesions of the duodenum and pancreas. The new operative interventions are described. It is particularly well illustrated, contains an up-to-date and extensive bibliography and is, on the whole, an excellent work.

CHARLES PHILIP MATHE, M.D.

The Roentgenographic and Clinical Picture of the Healthy and the Diseased Spine. By C. G. Schmorl and H. Junghanns. Stuttgart: Georg Thieme Verlag, 1957. Pp. [illegible], with 119 illustrations.

Since [illegible] the book written and published by Schmorl and Junghanns, dealing with the [illegible]

[illegible] of these are made more easily understandable by accompanying line drawings. There are also excellent photographs showing pathologic conditions of the vertebral bodies and of the intervertebral discs. In preparing this addition, the literature of the last thirty years has been carefully studied. An appendix of bibliographic references fills 42 pages. This is a most thorough coverage of the literature dealing with the diseases and degenerative changes that may affect the human spinal column. All who are interested in a better understanding of the pathologic nature, the roentgenographic signs and the clinical courses of diseases of the spinal column should have access to this beautifully printed and illustrated volume.

EDWARD L. COMPERE, M.D.

Texas Surgeon. By Donald T. Atkinson. New York: Ives Washburn, Inc., 1958. Pp. 180.

In his foreword to this personal account, Dr. Arnold Jackson, of the Jackson Clinic, Madison, Wisconsin, says: "Any young man or woman contemplating a career in medicine will find great inspiration from reading this book." It offers more than inspiration—there is humor in it, and triumph of the spirit.

Dr. Atkinson is Canadian-born, a native of New Brunswick, which he left as a youth to try his fortunes in the United States. He worked on a freighter, as a coachman, and as a male nurse while attending night school. He finally got his M.D. from the University of Louisville, and went west around the turn of the century to practice in the Oklahoma Territory. His anecdotes of ministering to the Indians are rich and full of human nature.

A specialist himself, in ophthalmology, Dr. Atkinson sees in the future [illegible]

[illegible]

The author of several medical texts, Dr. Atkinson, at 85, is still practicing in San Antonio. His autobiography should fascinate readers in all walks of life. One can only wish that it were three times as long.

MAX THOREK, M.D.

The Operation. By Leonard Engel. New York: McGraw-Hill Book Company, 1958. Pp. 277, with diagrammatic endpapers.

When a top-flight journalist engages in truly scientific research, his writing is bound to give to his subject the dramatic power to which it is entitled. Leonard Engel is such a writer, and this minute-by-minute account of an open heart operation at the University of Minnesota Hospital is completely fascinating.

The patient is fictitious—a composite of many whose cases are recorded in the archives of the hospital. The other characters are real, particularly Drs. C. Walton Lillehei and Richard L. Varco and their colleagues, who performed the operation.

Joyce Wilder, the 13-year-old patient, had a congenital defect—an opening in the muscular wall between the right and left ventricles. The job was to patch the opening.

Step by step the reader *sees* the operation, with full explanation in terms that everyone can understand. And, with the consummate skill of the professional writer, the author works in flashbacks that recount the tremendous advances in medicine and surgery which have made such operations possible. Not a detail is omitted—the operating room, the equipment, the work of the interns, residents, nurses, the whole team. The tension of the operating room is there, and its triumph. The endpapers diagram the particular cardiac defect under discussion and the operating room in which the drama in real life was performed.

Because of the importance of open heart surgical treatment and the masterly writing of this book, *The Operation* should become a national best seller, read by the general public as well as by all professional men.

O. C.

Human Dissection, Its Drama and Struggle. By A. M. Lassek. Springfield, Ill. Charles C Thomas, Publisher, 1958. Pp. 310. Illustrated.

A distinguished anatomist reviews the long history of dissection and its contribution to the knowledge of anatomy and the development of medicine, from the time of publication of Vesalius' *De Corporis Humani Fabrica Libri Septem* to the present day.

The author investigates religious beliefs in China, ancient Greece, Egypt and Rome as well as in Scotland and England, and the development of medical education in the United States and abroad. It is a fascinating text and well deserves its subtitle.

M. T.

Chirurgia Geriatrica (Geriatric Surgery). By Gian Carlo Parenti and Mario Fabi. Turin: Edizioni Minerva Medica, 1958, Pp. 303.

In the past decade or two, texts on pediatrics as a specialty have appeared in the medical literature. Now attention is being given to geriatrics as presenting special surgical problems. This work is therefore a welcome addition to contemporary surgical literature.

The authors are to be congratulated on having covered, in 303 pages, the essentials of the surgical picture presented by the elderly and aged. The text is noteworthy for its statement of facts and its freedom from padding and extraneous material. There are 20 graphs and a comprehensive bibliography. A preface by Prof. A. Mario Dogliotti testifies to the excellence of the work.

It would be well to have this work translated into English for the benefit of English-speaking surgeons.

M. T.

The Physiology and Pathology of the Cerebellum. By Robert Stone Dow and Giuseppe Moruzzi. Minneapolis: University of Minnesota Press, 1958. Pp. 675, with 185 illustrations.

This book is expected to be one of a two-volume work. The other volume, on the anatomy of the cerebellum, by Professor Olof Larsell is expected to appear in the near future. The present volume is divided into two parts. The first is devoted to cerebellar physiology and comprises about two-thirds of the book (374 pages). Part 2 is given over to pathology (189 pages). The bibliography requires 68 pages and contains more than 900 references. There is a complete index (39 pages).

After a brief historical introduction, chapters are devoted to ablation experiments, stimulation experiments, electrophysiological experiments and the relations between the cerebellum and other structures of the central nervous system. The authors attempt to give a complete account of all the relevant experimental data on the cerebellum from the time of Rolando to the present. They have not attempted the formulation of a new concept of cerebellar function but emphasize the advances that have been made in recent years, especially by the introduction of electronic methods. They do point out areas in which further study is urgently required. First, in their opinion, an attempt should be made to arrive at a quantitative estimate of the relative intensity and continuity of the control exerted by the cerebellum on posture, on voluntary movements and on sensory and autonomic functions. Second, they point out the need of more knowledge of the basic mechanisms involved in cerebellar control of the spinal cord, brain stem and cerebellum. Finally, they emphasize the fact that the profession is poorly informed on the intracerebellar relations that must exist in order to harmonize the control of the cerebellum over the various extracerebellar mechanisms to which it is anatomically connected.

In Part 2 the first three chapters are on the clinical symptoms of cerebellar disorders, the "cerebellar" symptoms of extracerebellar lesions and convulsive and hyperkinetic disorders of the cerebellum. The remaining chapters take up developmental anomalies, atrophic lesions, inflammations, vascular diseases, trauma and finally neoplasms. The [illegible] Much of the [illegible]

[illegible]

[illegible] M.D.

Martius' Gynecological Operations. Translated and edited by Milton L. McCall and Karl A. Bolten. Boston: Little, Brown & Company, 1958. Pp. 405, with 450 illustrations.

This work was published originally in 1936. The first English translations appeared in 1939, under the editorial supervision of the late Dr. W. A. Newmandorland. This seventh edition will take its place successfully by the side of its predecessors. The theme here, as in the previous editions, is that one should deal with the topographic and anatomic aspects of gynecologic surgery. A worth-while part of this book is its emphasis on the effect of pathologic processes upon the normal anatomic picture. Since the anatomic and pathologic elements of surgical conditions do not change, this phase of the book remains essentially the same. Noteworthy is the addition of illustrative material that deals with plastic operations on the vagina, with particular emphasis on the supporting parametrium. The sections dealing with sterility and sterilization have been revised thoroughly.

The principle of Martius that one should consider the individual patient rather than depend upon mass statistical study for surgical indications should be seconded heartily. This work can be recommended to anyone interested in gynecologic surgery.

P. THOREK, M.D.

Diagnostic Clinique Pronostic et Traitement des Tumeurs Benignes et Malignes (Clinical Diagnosis, Prognosis and Treatment of Benign and Malignant Tumors). By C. A. Perret. Paris: G. Doin & Cie, 1958. Pp. 892, with 181 illustrations.

This extensive volume makes available practical information on the pathologic aspect of benign and malignant tumors. The preface, by Prof. Henri Redon, stresses the importance of this work on the basis of the knowledge and experience he has acquired during his long career as surgeon and teacher. He states that this is the first book of its kind [illegible]

[illegible]

family physician, as the patient first seeks his advice for what he considers an insignificant swelling. The physician can usually recognize an early malignant tumor, which may be easily removed at this stage. Those discussed are carcinomas of the skin, the lips, the mouth, the tongue and, in some instances, the rectum. The author states that malignant harm may be caused by histologically benign tumors because of their unfavorable location, as in the larynx or the neck of the bladder.

Five books make up this volume. They are arranged according to the various regions of the body, so that the reader can easily find a specific subject.

The first book deals with the head. It describes precarcinomatous and carcinomatous lesions of the skin of the entire body; face, mouth, tongue, pharynx, tonsils, palate, salivary glands, orbit, eyes, ears, maxillary bones, scalp, skull, brain, etc. The author favors enucleation of mixed tumors of the lip, but Prof. Redon recommends wide excision.

The second book takes up congenital and acquired neoplasms of the neck, thyroid, parathyroid, larynx, thorax, mediastinum, thymus, pleura, lungs, esophagus, heart, pericardium, breast and spinal cord. The medical treatment of goiter (administration of Thiomidil, iodine preparations, etc.), irradiation, radioactive iodine therapy and the preoperative and postoperative care accompanying thyroidectomy are discussed in detail. Because of the frequency of goiter in Switzerland, this account is most comprehensive. The technics of lumbar puncture and peridural anesthesia are included in the chapter dealing with tumors of the spinal cord.

The third book considers tumors of the abdominal wall, urachus, omentum, retroperitoneal space, mesentery, stomach (benign, premalignant and malignant), duodenum, small intestine, rectum, anus, gallbladder, liver, pancreas and spleen. The author calls attention to the fact that carcinoma can develop in the scar of a healed gastric ulcer and advises removal of all gastric ulcers undergoing tumefaction, as well as carcinomatous ulcers and those indicating malignant degeneration. The dumping syndrome that frequently follows gastrectomy is described. The chapter on primary cancers of the "carrefour hápatique," in which partial resection of the liver is performed along with cholecystectomy, removal of carcinomas of the hepatic duct and the ampulla of Vater, and removal of perceptible regional lymph glands is well written.

The fourth book is devoted to tumors of the testicle, bladder, urinary tract and adrenal gland. The author stresses early operation for malignant tumors of the testicle (before the lymph glands are invaded). He notes the frequency of its occurrence in the undescended testicle. He points out the difficulty in differential diagnosis, as tumefaction can be due to tumor, tuberculosis, syphilis or organized hematocele. Urethral tumors include benign polyps usually situated in the posterior portion of the urethra, readily destroyed by fulguration, and primary and secondary carcinoma of the urethra with unfavorable prognosis. The author emphasizes the fact that hematuria is a signal symptom of tumor of the urinary tract and stresses the necessity of diligent search for its origin. There is a beautiful diagram indicating the various sites of tumors in the urinary tract. The author discusses vesical tumors at length and points out their frequency in the *bas-fond* of the viscus.

The chapter on renal tumors includes malignant lesions of the parenchyma, pelvis, and ureter, as well as benign cystic disease, solitary, polycystic, etc. A chapter is devoted to the diagnosis and treatment of aneurysm of the renal artery.

The treatment of benign tumors of the prostate (hypertrophy) by suprapubic, perineal or retropubic prostatectomy, as well as transurethral resection, is presented. The author points out that the frequency of prostatic carcinoma is 20 to 30 percent in men under 40 years of age, and 50 percent in men aged 70 or over. The specific treatment by American and European urologists is described in detail. The indications for radical removal, transurethral resection, hormone therapy, castration and radiotherapy are clearly outlined.

The fifth book is devoted to tumors of the vagina, uterus (cervix and body), fallopian tubes and ovaries. Conditions indicating local excision and hysterectomy for benign tumors of the urterus are listed. Interesting statistics are cited concerning results obtained at the Curie Foundation, Paris, in the treatment of carcinoma of the cervix by radium, with and without roentgen therapy. Surgical removal of carcinoma of the body of the uterus includes the radical and extensive Wertheim operation.

The primary aim of the author is to aid the general practitioner in making early diagnosis of malignant as well as of harmful benign tumors, at a time when surgical cure is possible. The book contains a complete bibliography, excellent diagrams and roentgenograms. There are many photographs of patients with tumors, as well as many showing pathologic specimens. As the author avers, the book offers the student as well as the practitioner indispensable information that will facilitate early diagnosis and the determination of prognosis. I heartily recommend this volume to all medical men.

CHARLES PIERRE MATHÉ, M.D.

Pediatric Surgery. By Ovar Swenson. New York: Appleton-Century-Crofts, Inc., 1958. Pp. 740, with 980 illustrations.

In the foreword to this fine text, William E. Ladd, pioneer in pediatric surgery, quotes Sir Lancelot Barrington Ward, of the Hospital for Sick Children in London: "The adult may safely be treated as a child, but the converse can lead to disaster."

Out of that philosophy has developed the rapidly growing specialty of pediatrics.

This complete text by Dr. Ovar Swenson, based on his long and wide experience, covers all aspects of the congenital, traumatic and acquired surgical problems of the infant and child. Minor as well as major surgical conditions are given careful attention. All procedures are plentifully illustrated, and operative technics are demonstrated in step-by-step detail.

The 38 chapters present the whole range of surgical conditions in children, including preoperative and postoperative care.

[illegible]

the same condition in children and in adults. The work is so thoroughgoing, however, that it can be highly recommended to both specialists and general surgeons.

M. T.

Difficult Diagnosis: A Guide to the Interpretation of Obscure Illness. By H. J. Roberts. Philadelphia: The W. B. Saunders Company, 1958. Pp. 913. Illustrated.

In his introduction, the author predicts that difficult diagnoses are on the increase in what he calls our transitional age of medicine, which is characterized by both the continuing effective control of acute illness and the new emphasis upon illnesses affecting the middle-aged, elderly and aged persons. In his opinion, a reliable guide to the diagnosis of obscure illness is very much in order. He warns the reader, however, that his text is not a "primer," but is intended for postgraduate study and for clinicians of mature experience.

The text is divided into two parts: Part 1, *Groupings of Related Diseases Frequently Producing Puzzling Illness;* Part 2, *Classification and Analysis of Useful Diagnostic Procedures.* The various groups of conditions discussed are: endocrinopathies; metabolic disorders; hepatic disease and jaundice; fever and infection of obscure origin; specific infections; hematologic diseases; noninfectious granulomata; vascular diseases; diseases of the heart and great vessels; dyscollagenoses, neoplastic diseases; disorders of the nervous system; iatrogenic illness; miscellaneous entities; obscure postoperative complications, and medical-surgical diagnostic problems. In each case the author discusses every facet thoroughly, drawing upon his own rich experience.

Dividing Parts 1 and 2 is a 61-page [illegible]

Part 2 [illegible]

[illegible]

For the internist, this text is invaluable. For the surgeon it is important. It can be highly recommended to all mature practitioners.

M. T.

Surgery of The Head and Neck. By Robert A. Wise, M.D., and Harvey W. Baker, M.D. Chicago: The Year Book Publishers, Inc., 1958. *Pp. 319, with 82 illustrations.*

Drs. Wise and Baker have written a rather thorough handbook of surgery of the head and neck. It includes chapters on examination of the head and neck, preoperative and postoperative care, anesthesia, and operative complications, These aspects are covered concisely; the review of the complications especially, indicates that the authors have encountered them at first hand and have given a good clinical summary.

The book has been written for the general surgeon, who may encounter these problems in a general surgical practice. Surgical treatment of tumors of the skin, lips, mouth, pharynx and nasal cavity are described in some detail, including plastic surgical repair. In addition, the authors have covered surgery of the jaws, salivary glands, thyroid and parathyroid glands, radical neck dissection, combined operations and laryngeal operations.

The illustrations are chiefly line drawings excellently complementing the text and dispersed throughout. The book is excellently organized, well written and printed on good paper in an attractive binding. It should be of assistance to the general surgeon who has need for additional training in head and neck surgery.

FRANCIS R. LEDERER, M.D.

Religious Doctrine and Medical Practice. By Richard Thomas Barton, with a foreword by Raymond B. Allen. Springfield: Charles C Thomas, 1958. Pp. 94.

Written as a reference book and not a critique, this highly interesting text explores the larger religious groups in the United States in those areas of faith which affect medical practice. Religious taboos are to be considered also by the nurse, the dietitian and the hospital administrator. The survey on which the book is based investigates religions of Asiatic, Middle Eastern, Western and American origin, as well as religions of "healthy-mindedness." Subtitled "A Handbook for the Physician, Nurse and Other Medical Personnel," the book should interest all thoughtful readers for its implications in community health.

O. C.

Chirurgie Préventive de la Tuberculose Ostéo-Articulaire (Preventive Surgery in Osteoarticular Tuberculosis). By R. Kaufmann. Paris: G. Doin & Cie, 1958. Pp. 174, with 49 illustrations.

The work in this book is based on the description by Percival Pott: "The disease originates in the tissues along the spine; at first the bones and ligaments are sound and healthy; early extensive drainage will cure the patient." In the preface Prof. H. Sauvage points out the "bellicose ardor" with which the author attacks the treatment of involved soft parts before the bony structure has been invaded by tuberculosis; hence his "preventive" surgical treatment. The author's opinions are based on his experience of thirty years.

The first chapters are devoted to the treatment of affected soft tissues: drainage of psoas abscess, ablation of affected lymph nodes, débridement of associated fistula, resection of areas of periosteitis, surgical correction of osteolysis, etc. In some instances the treatment prevents invasion of tuberculosis in the bony structure, and in others it may arrest the process when already present. Case histories are accompanied by roentgenograms taken before and after treatment.

Infection via the lymphatic system, as reported by Pecquet, Rouvière, Verguz and Calmette, is depicted in excellent drawings. The manner of tuberculous invasion of the digestive tract, lungs, etc., is described, and includes adenitis, phthisiogenesis and phthisis with primary focus in the lung or kidney.

The pathologic-anatomic aspects of paravertebral adenitis localized in the prespinal system (Pecquet), associated with Pott's dissease, is discussed. The author emphasizes that roentgen evidence of osteolysis does not necessarily indicate tuberculosis. He gives a critical analysis of the terms caries, paralysis, spondolysis and compression osteolysis, which have been used by orthopedists, neurologists, surgeons and radiologists. The pathogenesis of the white tumor with associated contact osteolysis, psoitis with ensuing lumbar arthritis and ileolumbar adenitis is presented. There may be repercussions in remote parts of the body, i.e., laryngitis with a pulmonary lesion, streptococcic tonsillitis with destruction of the myocardium or kidney and pelvic adenitis with synovitis of a foot. The author explains these destructive phenomena on an allergic basis.

A chapter is devoted to the treatment of osteolysis of the pelvis associated with anal fistula. Ablation of associated retrorectal glands (Gerota-Quénu) cured 1 patient. Tuberculosis of the upper extremity and the cervical and dorsal portions of the spine, as well as the associated adenopathy, are discussed in detail.

In dealing with antibiotic treatment of osteoarticular tuberculosis, the author points out that the resisting bacteria in a lesion that remains tuberculous must be removed before relief can be obtained. He stresses the importance of treating glandular allergy, as lesions may develop much later in other organs (in the kidney in 2 of the author's patients). He describes his surgical technic for the prevention of paraplegia in the treatment of Pott's disease of the middorsal spine.

There are detailed reports on 45 patients, exemplifying the author's treatment of osteoarticular tuberculosis, including primary adenitis, pulmonary or osseous complications, suprarenal involvement, white tumors of the knee, sacrocoxalgia, tuberculous rheumatism, etc.

This timely book is most informative as to the extent, clinical course and pathogenesis of osteoarticular tuberculosis. It contains an extensive bibliography. The principles, technics and doctrines advocated by the author have been approved by such eminent surgeons as [illegible], [illegible] and [illegible].

[illegible] M.D.

Ideals in Medicine. By Vincent Edmunds and C. Gordon. Chicago: The Christian Medical Society, 1958. Pp. 192.

Subtitled "A Christian Approach to Medical Practice," this book was first published in London by the Tyndale Press. It is designed particularly for the medical student and is concerned not only with religious attitudes toward medicine, but with all phases of medical practice, such as the doctor's personal standards, his relation with his patients and their families, problems of treatment, research and professional secrecy, the control of life, faith-healing and the doctor-minister relation, etc. Eleven contributors discuss these various problems objectively but with deep sympathy and understanding. The book can be recommended to lay folk who would like to know more about the medical profession, as well as to professional people.

O. C.

Bibliography of International Congresses of Medical Sciences. Prepared by W. J. Bishop under the auspices of the Council for International Organizations of Medical Sciences. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 238.

This bibliography was prepared as a guide for congress organizers, librarians, editors and others who wish to trace the published proceedings of medical congresses. It gives particulars of 1,427 meetings devoted to some 362 different aspects of medicine. The bibliographic description gives the title, number of volumes, number of pages, note of illustrations, place of publication, publisher and date of publication of the proceedings of each congress. Whenever possible, the languages represented in the report are noted. Entries are arranged under subject headings, and a copious index of synonyms and other subject words is added for easy reference.

This book is [illegible] in the [illegible] [illegible]

[illegible]

Abstracts from Current Literature

Cancer of the Stomach in Honduras. Schapiro, Mark M., J. Military Med. 123:113, 1958.

The general impression that carcinoma of the stomach does not occur in tropical countries is erroneous. In Honduras it occurred in 8.4 per cent of 213 patients studied for vague, mild or definite gastrointestinal complaints. The importance of careful, detailed and serial examination of all patients over 40 years of age who complain of anorexia, indigestion, etc., is stressed. The first three total gastrectomies performed in Honduras are reported. The results show that the native Honduran can withstand radical gastric surgical procedures. The investigation revealed that the more radical operation is indicated in most instances if the present recovery rate is to be raised. Too much dependence on roentgen interpretation of the lesion will cause many operable patients to be overlooked and decrease the rates of operability and recovery. Operability should be determined only at the operating table. For carcinoma of the stomach, only that type of surgical intervention which will give relief and hope to the patient should be performed.

Of the 18 patients operated on, 5 were living and well one to five years after operation. Six patients died within two to four months after the operation but had complete relief of their symptoms and bodily comfort during the time of survival. Two patients died within the immediate postoperative period. Five patients were lost to follow-up.

The immediate operative mortality rate (2 cases) for the entire series was 11.1 per cent. The overall mortality rate among patients surviving the operation (6 cases) was 33.3 per cent, and the one-to-five-year survival rate amounted to 27.7 per cent. This last figure closely approximates that given by Walters and Berkson of the Mayo Clinic.

Complete surgical removal of malignant lesions of the stomach remains the best method of treatment. Exploratory laparotomy should be performed on every patient suspected of having carcinoma of the stomach, through a small, adequately placed upper abdominal incision that can be extended in any direction, even thoracically, if necessary. If on exploration the lesion is found to be obviously inoperable because of major vessel involvement, vast pulmonary, hepatic or other invasion, a simple tubovalvular gastrostomy is the operation of choice.

The earlier the diagnosis and the more immediate and radical the operation, the more survivals there will be among patients with carcinoma of the stomach.

ERNEST G. ABRAHAM, M.D.

Thyroid Function in Patients with Mammary Cancer. Edelstyn, G. A.; Lyons, A. R., and Welbourn, R. B., Lancet 1:670, 1958.

Thyroid function was studied in 67 patients with carcinoma of the breast by measuring the neck uptake, urinary excretion, and protein-bound fraction of I^{131}. The patients were divided into two groups on the basis of a full clinical examination and radiographic study of the chest and skeleton. Each of the first group (local disease only) had a tumor confined to the breast, the chest wall, or the local (axillary or supraclavicular) lymph glands. In the second group (with blood-borne metastases) there was distant spread of the disease. The ages of the patients in the two groups were similar. No patient had been given any hormonal therapy. Function was significantly lower in those who had blood-borne metastases than in those who had local or locally advanced disease.

It is evident from the author's observations that reduced thyroid activity and widespread mammary carcinoma are associated, while normal thyroid function is present in patients with local disease, no matter how far advanced. The important question to ask is "Which comes first?" Do blood-borne metastases depress thyroid activity, or does reduced thyroid function favor the distant spread of malignant change? These questions cannot yet be answered, but there are several points in favor of each possibility.

Widespread carcinoma might depress thyroid function in one of two ways:

1. Metastases in the pituitary, in the thyroid, or in both might destroy functioning tissue. Metastases are common in these glands, but they are usually small and do not affect other aspects of pituitary function: indeed, Sommers (1955) has hyperplasia of the ovary and the adrenal cortex in patients with metastatic carcinoma of the breast.

2. Cachexia and toxemia might depress pituitary function. The authors consider this unlikely, since many of those with locally advanced disease (Group 1) were more toxic and cachectic than those in the metastatic group (Group 2).

Further direct evidence could be obtained by studying thyroid function in patients with blood-borne metastases from other types of cancer. A preliminary study shows that function was normal in 5 such patients tested by the authors. This suggests, at the moment, that widespread metastases do not themselves depress thyroid function.

The other possibility is that depressed thyroid function might favor the development of distant metastases. In support of this are the correlation between reduced thyroid function and a high death-rate from carcinoma, as well as the effects of thyroxine and of thiouracil on the behavior of carcinoma in laboratory animals. Further evidence could be obtained by giving thyroid extract prophylactically to patients who have had primary treatment for uncomplicated carcinoma of the breast. One of the authors (A. R. Lyons) is conducting a controlled clinical trial along these lines. Two groups of 80 patients who have undergone primary mastectomy and radiotherapy have been observed for two years. One group has been given thyroid extract and the other [illegible]

[illegible]

Ectopic Pregnancy: Analysis of Three Hundred Twenty-Two Consecutive Cases, 1935-1954. Malkasian, G. D. Jr.; Hunter, J. S. Jr., and ReMine, W. H., J.A.M.A. 168:985, 1958.

Factors determining the incidence and course of ectopic pregnancy were studied by comparing 161 cases encountered during the first ten years with 161 encountered during a second period of ten years.

The initial complaint was abdominal pain in 38.5 per cent and vaginal bleeding in 36.4 per cent of the entire group: in 24 per cent the initial complaint was simultaneous abdominal pain and vaginal bleeding.

A tendency toward increasingly conservative surgical procedures and more liberal use of blood transfusion was noted in the later group. In the same group there was an increased number of women who had had subsequent pregnancies.

The study suggests that the morbidity rate of appendectomy with surgical operation for ectopic pregnancy is no greater than with abdominal hysterectomy.

EDMUND LISSACK, M.D.

Depression of Gastric Secretion and Digestion by Gastric Hypothermia: Its Clinical Use in Massive Hematemesis. Wangensteen, O. H.; Root, H. D.; Jensen, C. B., Imamoglu, K., and Salmon, P. A., Surgery 44:265, 1958

The authors have investigated the effect of cold on the secreting systems of the stomach in an ingeniously contrived series of experiments on cats, rats, dogs, frogs, fish and man.

With the smaller animals systemic hypothermia by immersion was employed; in the canine and human tests, local gastric cooling was produced by means of an intragastric balloon that filled the stomach and was perfused with a cold 50 per cent [illegible] Since total body [illegible] local gastric hypothermia [illegible] at 20 C. by the use of systemic hypothermia, little or no evidence of esophagitis was observed. Similar striking results were observed in the experiments on rats, dogs, frogs and fish.

Observations in man with regard to the influence of the gastric temperature upon the rapidity of digestion of a swallowed bolus of raw beef suggested that local gastric hypothermia retards digestion in a patient with a peptic ulcer diathesis. In man as well as in the dog, local gastric cooling depressed considerably the volume of secretion, while failing to influence the *p*H. Inhibition of pepsin activity at the low temperatures employed was presumed to be accountable for the depressed gastric digestion observed in the experimental subjects.

The practical application of these observations was exhibited in 5 patients with massive gastric hemorrhage. This experience suggested to the authors that local gastric hypothermia favorably influences the arrest of hemorrhage of acid peptic origin. They are convinced that local gastric hypothermia can be produced rather simply and can be employed apparently without danger. No gross or microscopic evidence of injury to the gastric mucosa has been observed after prolonged gastric cooling in the dog. It is suggested that local gastric cooling may prove to be of real value in preparing patients with active massive gastric hemorrhage for operation.

THOMAS WILENSKY, M.D.

Treatment of Bladder and Prostatic Cancer by Combined Interstitial Isotope Radiation and the Cobalt Bomb. Rusche, C. F., and Jaffe, H. L., J. Urol. 79:474, 1958.

The authors describe their technic for the treatment of vesical carcinoma.

Clinical Stage 0 (*Benign Papillary Carcinoma*): This is treated with cystoscopic fulguration.

Clinical Stage 1 (*Malignant Papillary Carcinoma*): If the tumor is single and there is no infiltration, it is treated with cystoscopic fulguration with radon. For recurrent papillary tumor, single or multiple, open operation on the bladder is done. Segmental resection is done if the tumor is suitably located for this procedure. If there are multiple and extensive tumors or the trigone is involved, fulguration with coloidal chromic phosphate is used.

Clinical Stage 2 (*Infiltration*): Segmental resection is done if possible. If there is recurrence or incomplete removal of the tumor, the cobalt bomb is employed. If the tumor is observed at operation to be extensive, the bulk is removed with the cautery and the isotope or radon seeds injected.

Clinical Stage 3 (*Actively Infiltrating*): The bulk of the tumor is removed with the cautery and the cobalt bomb is used.

The cobalt bomb is used for patients with involvement of the trigone, in the presence of which interstitial therapy would destroy the orifices; infiltrating tumor of the outlet; multiple infiltrating vesical tumors; recurrent low-grade spreading tumors involving large areas of the bladder, and superficial tumors becoming highly malignant.

Clinical Stage 4 (*Distant Metastases*): Palliative cobalt therapy is used.

For patients with recurrent prostatic carcinoma who have previously had injections of colloidal chromic phosphate, cobalt bomb rotation therapy is used.

SHEPARD JEROME, M.D.

Biliary Vesicular Stasis. Rose, J. D., Lancet 1:1356, 1958.

Vesicular stasis is a common disorder of the biliary tract; it was observed in nearly a fifth of 200 consecutive patients who were investigated and treated. There are two main types, the hypotonic and the hypertonic.

The "classic" cholecystogram in this condition shows no abnormality, and an accurate diagnosis can be made only by means of serial cholecystographic study, or transparietohepatic puncture of the gallbladder before the operation, and by manometric and radiologic investigation at operation. Of 34 cases of vesicular stasis treated surgically, the results were good in 31; in only 3 did the condition remain unimproved.

WILLIAM E. NORTH, M.D.

The Surgical Management of the Postphlebitic Leg Ulcer. Donald, D. C., J.A.M.A. 28:44, 1958.

The postphlebitic limb is the major sequela of the milkleg syndrome. The incompetence of the valves of deep veins is responsible for milkleg; therefore, the degree of venous infection and damage to valves determine the future soft tissue changes, such as swelling, induration and alterations in the skin.

The author states that in the early stages of thrombophlebitis the vessels become occluded. This blocks the return venous flow, and edema results. The damage is not confined to the parent vessel but extends to surrounding perivenous tissues, including the communicative veins and their valves, the capillary bed and its lymphatics. Consequently, there is damage to those also. The thrombus is usually absorbed in six to twelve months, and recanalization occurs. The involved valves, however, become inadequate for normal venous function, and the veins become hard fibrous cords, which results in venous stasis and hypertension. This ambulatory venous hypertension causes increased pressure in the venous capillaries, thereby decreasing the supply of arterial blood to the capillaries and causing decreased oxygenation of tissues, with resulting edema of the limb. Thrombophlebitis also causes pathologic change in lymphatics that prevents tissue fluid from being drained off.

Clinical tests for determining the patency of venous systems used were as follows: 1. Trendelenburg's which consists of applying a tourniquet to the elevated extremity with enough pressure to occlude the long saphenous vein, then allowing the patient to walk. If the incompetence is confined to the long saphenous alone, the vein remains empty until the legs are filled by natural circulation. 2. Linton's test, which places the tourniquet below the knee. If the communicating veins are incompetent, the surface veins will fill below the tourniquet within thirty seconds.

A thorough understanding of the anatomy of the venous supply of the legs is necessary to proper management. This consists of three systems: (1) superficial long and short saphenous veins; (2) deep anterior and posterior tibial and femoral veins, and (3) [illegible]. The superficial and [illegible] veins are supplied with valves that allow blood to flow to the heart and from the superficial to the deep veins only. Once damaged the valves become incompetent, allowing blood to gravitate from the body into the lower limb, resulting in venous stasis and hypertension.

Management of the postphlebitic ulcer consists of the following steps. 1. First, cure the ulcer. If it is active, best results are obtained by putting the patient to bed, with continuous application of a moist dressing to the elevated limb for five to seven days. This is followed by application of an elastic adhesive bandage over a petrolatum gauze dressing in the form of a modified Unna boot and allowing the patient to be up and about. The dressing is changed weekly until complete epithelization occurs. 2. Second, operate. The operation should be directed to combating the venous ambulatory hypertension and interruption of the neurovascular bed. This consists in (a) removal of the enlarged superficial veins, especially in the lower part of the leg, namely, the internal and external saphenous veins and their tributaries; (b) interruption of the communicative veins beneath the fascia, especially those on the inner and posterior sides of the lower part of the leg; (c) interruption of the canalized superficial femoral vein and the valveless venous system, the internal saphenous vein in the upper part of the thigh, and (d) removal of a strip of fascia from the posterior aspect of the leg to aid lymphatic drainage of the skin and subcutaneous tissues onto the lymphatics of the muscles. 3. Support the limb with an [illegible] bandage for at least three months after the operation.

JOHN A. ZIMMAN, M.D.

Lymph Follicles in the Cervix Uteri. Demetrakopoulos, N. J., and Greene, R. R. Surg., Gynec. & Obst. 106:729, 1958.

Lymph follicles are [illegible] many organs, such as the [illegible]

[illegible]

Twenty-nine serially blocked cervices from adults were studied in this series; 48.3 per cent contained lymph follicles.

No inflammation and no lymph follicles were observed in 12 serially blocked fetal cervices. Nevertheless, these fetuses were able up to the time of their death to form lymph follicles in other tissues.

It was concluded that the lymph follicles in the cervical mucosa are not congenital structures but appear after birth and are usually associated with, and probably result from, chronic inflammation.

EDMUND LISSACK, M.D.

Goitre and Arteriosclerosis. Uotila, U.; Raekallio, J., and Ehrnrooth, W., Lancet 2: 171, 1958

The authors compare postmortem observations in 250 patients with fatal coronary sclerosis with those of 250 who died from other causes.

Goiter was commoner, and the average weight of the thyroid was higher, in those with coronary sclerosis. Among the patients with coronary sclerosis, those with goiter had a tendency to a lower average age at death and a higher average heart-weight.

Comparison of body build showed that the 250 persons with coronary sclerosis were slightly shorter and heavier than the controls. Among those with coronary sclerosis, those with goiter were heavier than those without goiter.

These data are correlated with observations made in Finland on the nature and distribution of endemic goiter, the iodine content of the food and the distribution of coronary sclerosis.

It is concluded that goiter and arteriosclerosis may have a pathogenetic relation, possibly through hypothyroidism and the overproduction of thyroid-stimulating hormone by the pituitary gland.

ARTHUR A. WOOD, M.D.

Cytological Screening for Uterine Cancer Through Physicians' Offices. Calabresi, D.; Arnold, N. V., and Stovall, W. D., J.A.M.A. 168:243, 1958.

If the cytologic screening test is to be used for the detection of carcinoma in apparently normal persons, a thorough understanding of the significance of the *in situ* lesion is imperative.

By use of a complete kit sent directly to the physician it is also feasible to reach a large rural population.

The salient cytohistologic picture has been studied in 65,163 women from whom vaginal smears taken by their local physicians over the past ten years in the course of an office visit. Excellent results from biopsy and clinical follow-up were obtained, and 9,111 patients returned for repeated screenings.

Reporting as an atypical observation the presence of normal glandular cells in smears of postmenopausal women may assist in improving the detection of endometrial adenocarcinoma.

The relation of *in situ* to invasive carcinoma is an important problem.

EDMUND LISSACK, M.D.

Optimum Spacing of Repeat Follow-up Papanicolaou Smears. Schulz, B.; Carlson, D. S., and Birge, E. A., J.A.M.A. 168:248, 1958.

The result of 15,389 cytologic examinations for carcinoma of the cervix uteri have been analyzed for the purpose of deciding how frequently such tests should be repeated.

On basis of a statistical follow-up for three years and of impressions covering approximately seven years, it would appear that negative results from cytologic examination, when associated with the absence of physical abnormalities after a thorough physical examination, imply that the patient is free of cervical carcinoma for at least two years.

EDMUND LISSACK, M.D.

The Surgical Treatment of Pulmonary Tuberculosis in the Mentally Ill. Mowlem, A., Connolly, C. J., and Zimmermann, B., Surgery 43:913, 1958.

This report represents a review of the surgical experience obtained from 403 pulmonary resections performed on 338 patients during a five-year period from July 1, 1952, to June 30, 1957. The emphasis in this study has been on the important surgical complications, their management, and the problems peculiar to the mentally ill.

The patients were adult psychotic and mentally defective persons referred on the basis of positive cultures of gastric washings or suspected lesions on roentgenograms. Upon arrival 6 consecutive cultures of gastric washings were obtained prior to the institution of antibiotic therapy. Such cultures were repeated if initially normal thoracic roentgenograms strongly suggested the presence of tuberculosis. Subsequently all patients with bateriologically proved tuberculosis and those with typical lesions but consistently negative cultures were given antituberculosis medication.

Patients with minimal disease whose lesions regressed progressively within two or three months after institution of medical therapy and eventually disappeared were not considered candidates for operation and antibiotics were continued for the duration of their treatment. Patients whose lesions regressed after a few months of antibiotic administration to small and stable nodular residuals without open cavities were operated upon and their lesions excised.

Patients with active endobronchial tuberculosis were not operated upon until these lesions healed. When possible, operation was also deferred for patients with open cavities until these became smaller, became sealed off from the tracheobronchial tree, or healed, leaving only small solid residual foci. Patients were not operated upon with positive gastric cultures at the time of the proposed operation except when their lesions became enlarged despite antibiotic treatment and the need for prompt removal of the focus of spread became evident. Patients with far-advanced bilateral lesions too extensive for resection without sacrifice of inordinate amounts of functioning pulmonary tissue were not operated upon and were treated medically. [illegible] Planigraphic, bronchoscopic, bronchographic and other diagnostic procedures [illegible] when indicated [illegible] of the extent of [illegible]

[illegible]

eral and at a distance from segmental and subsegmental bronchi, wedge resections were carried out. When the disease was more extensive and involved one or more segments of a lobe but not the entire lobe, segmental resections were performed whenever possible, in order to leave intact as much healthy pulmonary tissue as possible. Care was exercised not to cut across diseased areas of the lung. Particular emphasis was placed on this, and later microscopic examination of the line of resection of the excised tissue as well as that of the bronchus was made to determine whether the margins were involved. Lobectomy was performed when the majority of the lobe was involved. Tuberculous bronchiectasis was considered a segmental disease and treated by appropriate resection. Pneumonectomy was limited to those patients in whom most of one lung was destroyed and whose opposite lung was relatively uninvolved and displayed adequate function.

A large number of the patients had bilateral disease. Most bilateral resections were performed in stages at intervals of three to nine months. Only 20 bilateral simultaneous resections were performed, most of these on young patients, when extensive resection was anticipated on either side. Such patients were carefully assessed, and only those able to withstand bilateral thoracotomy and transverse sternotomy in addition to the resections were managed in this manner.

The aforementioned criteria used in the selection of the operations were not rigid, changes were required for the problems of individual patients.

It should be pointed out that thoracoplasty as a primary procedure for the treatment of pulmonary tuberculosis was not used [illegible] in 1 case during the period covered by this report, but was reserved for [illegible] whom, at the end of [illegible]

Patients were given 200 to 300 mg. of Isoniazid (INH) daily in divided doses and 1 Gm. of streptomycin sulfate intramuscularly twice a week for a total of at least eighteen months, a minimum of six months of which was received after the last surgical procedure. During the past two years, with increasing evidence to support the effectiveness of long-term Isoniazid therapy, this period of antibiotic coverage has been prolonged, and patients are maintained on drugs for twelve to eighteen months after uncomplicated operations. It has been possible to transfer some patients back to the referring institutions for completion of the course. A program of treatment with large doses of INH supplemented by pyridoxine to prevent damage to the nervous system has been employed in a few selected cases, and during the two weeks following the operation the routine therapy was intensified and modified to include 1 Gm. of streptomycin daily in addition to daily INH and penicillin. After recovery from the operation the routine schedule of INH and streptomycin was resumed. Other drugs, such as para-amino salicylic acid (PAS), dihydrostreptomycin, viomycin and pyrizinamide (PZA), singly or in various combinations and doses, were administered with or without INH and streptomycin when drug allergies arose in patients and when specific drug-resistant tubercle bacilli were encountered. The INH-streptomycin regimen has been considered the program of choice for these patients, since it is difficult to persuade mentally ill persons to accept large oral doses of PAS.

Care of the mentally disturbed after thoracotomy has its peculiar problems, in addition to those expected in mentally alert patients. These assumed great importance in this series, since the group included many types of psychosis and mental deficiency. Usually these patients were unable to comprehend what was taking place, and therefore their active cooperation during the postoperative period was almost nonexistent. Such simple but important voluntary measures as coughing and deep breathing were not possible and had to be replaced by endotracheal suction. Tracheotomy was very frequently resorted to as the best method of cleaning the respiratory tree. These difficulties have contributed to the morbidity and mortality rates associated with the common complications of thoracic surgery.

Four hundred and three pulmonary resections were performed on 338 mentally disturbed patients during the period between July 1952 and July 1957. Two hundred and eighty-nine segmental resections, 67 lobectomies, 23 pneumonectomies, and 24 wedge resections were carried out in unilateral, staged bilateral and bilateral simultaneous procedures, with an over-all operative mortality rate of 8.2 per cent and a patient mortality rate of 9.7 per cent.

WILLIAM E. NORTH, M.D.

Hiatus Hernia: Its Incidence And Clinical Significance. Hafter, E., 3:1, (Jan.) 1958.

The radiologic aspects, the symptoms and the treatment of hiatus hernia are presented, on the basis of observations in 300 cases. A characteristic triad of symptoms was noted: those localized to the retroxiphoid or epigastric region, those due to incompetence of the cardia and those due to secondary esophageal involvement. All these symptoms are dependent on posture; recumbency or raising the intraabdominal pressure produces the symptoms, while an upright position results in their disappearance.

To obtain radiologic evidence of a hiatus hernia, the terminal portion of the esophagus should be filled with contrast medium, the patient being recumbent and exhaling, and entry of the hernia through the hiatus assisted by special positioning of the patient or by raising the intraabdominal pressure. The incidence of hiatus hernia among the author's patients with upper abdominal symptoms was about 10 per cent, ranking third behind cholelithiasis (18 per cent) and duodenal ulcer (13 per cent).

In most cases, the symptoms first appeared after the age of 50 years but the diagnosis was often not made until several years later. In half of the cases the hernias were associated with other diseases, most frequently cholelithiasis and gastrointestinal diverticulosis.

Treatment should be medical in most cases. It consists of the patient's lying in a proppedup position at night and avoiding heavy evening meals, and of antacids, antispasmodics and sedatives.

The only indications for operation are hemorrhage, severe stenosing esophagitis, and failure to respond to intensive conservative treatment in patients with very severe symptoms. The operative results are not always good and depend largely upon the skill of the surgeon and the technic used. The methods of Allison and Sweet are usually adopted. A restoration of the angle of His by esophagogastropexy appears to be particularly important to the successful result of the operation. The abdominal approach has been employed in recent years, especially for thin patients, as it seems to be less disturbing to them. No final opinion can be offered at this time on a simple technic of gastropexy to the anterior abdominal wall.

Of the author's 300 patients, 25 (8.3 per cent) underwent surgical treatment. The postoperative results in 19 patients operated upon by the thoracic approach were: 8 patients free of symptoms, 5 improved and 6 not improved. Of 6 patients operated upon by the abdominal route there were 5 free of symptoms and 1 not improved.

Other reports also show unsatisfactory postoperative results in between 25 and 35 per cent of the cases.

The diagnosis of hiatus hernia is still missed too frequently.

ERNEST G. ABRAHAM, M.D.

If the sufferer acts like a goat, and if he roars, or has convulsions involving the right side, they say the Mother of the Gods is responsible. If he utters a higher-pitched and louder cry, they say he is like a horse and blame Poseidon. If the sufferer should be incontinent of faeces, as sometimes happens under the stress of an attack, Enodia is the name. If the stools are more frequent and thin like those of kids, it is Apollo Nomius; if he foam at the mouth and kick out with his feet, Ares is to blame. If he suffers at night from fears and panic, from attacks of insanity, or if he jumps out of bed and runs outside, they talk of attacks of Hecate and the assaults of the heroes. In using purifications and spells they perform what I consider a most irreligious and impious act, for, in treating sufferers from this disease by purification with blood and like things, they behave as if the sufferers were ritually unclean, the victims of divine vengeance or of human magic or had done something sacrilegious. It would have been better if they had done the opposite and taken the sick into the temples, there, by sacrifice and prayer, to make supplication to the gods; instead they simply purify them and do none of these things. Charms are buried in the ground, thrown into the sea or carried off into the mountains where no one may touch them or tread on them. If a god really be responsible, surely these things should be taken into the temples.

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the *Middle East should send their articles to:*

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
Collège international de chirurgiens
6-8 rue de la Confédération
Genéve (Suisse)

Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

The Journal of the International College of Surgeons

Vol. 31, No. 1 SECTION II January, 1959

BULLETIN

Embodying Activities of the World Federation of General Surgeons and Surgical Specialists, Section News and Comments

Editor-in-Chief—MAX THOREK, M.D.
Associate Editor—PHILIP THOREK, M.D.
Consulting Editor—MORRIS FISHBEIN, M.D.
Assistant Editors—DOROTHY LANGLEY AND HELEN WEISS

CONTENTS

Page
Brazilian Section Establishes Own International College of Surgeons Home 1
Comments by the Founder: Looking Back on 1958 6
Gram's Stain 10
Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.C.S. (Edin.), F.I.C.S. (Hon.), Sholden, Kent, England
Announcement of Manuscript Award for 1959 by the Division of Obstetrics and Gynecology of the International College of Surgeons 12
Hunter Holmes McGuire 13
Frederick Stenn, M.D., F.I.C.S., Chicago, Illinois
Postgraduate Courses and Conferences 15
Japanese Gift to Hall of Fame 16
From the Executive Director's Notebook 17
UNITED STATES SECTION
The President's Message 19
Dr. Karl A. Meyer 21
Dr. Max Thorek Semmelweis Lecturer [illegible]
The Man and his Portrait: Dr. Nicholas A. Michels [illegible]
News Briefs 27
Woman's Auxiliary
Officers of Woman's Auxiliary [illegible]
The President's Message [illegible]
Our Membership Program [illegible]
The Memorial Fund [illegible]
SECTION NEWS
[illegible]

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CONTENTS

Page
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Dr. Karl A. Meyer 21
Dr. Max Thorek Semmelweis Lecturer .... [illegible]
The Man and his Portrait: Dr. Nicholas A. Michels .... [illegible]
News Briefs 27
Woman's Auxiliary
Officers of Woman's Auxiliary .... [illegible]
The President's Message .... [illegible]
Our Membership Program

THIRD LECTURE SERIES

1958-1959

School of the History of Surgery and Related Sciences
International Surgeons' Hall of Fame
1524 Lake Shore Drive, Chicago

LECTURES BEGIN AT 8:00 P.M.

OCTOBER 21, 1958 . . . . *"Changing Concepts of Disease"—Dr. Ilza Veith, Associate Professor in the History of Medicine, Department of Medicine, University of Chicago, Chicago, Illinois*

NOVEMBER 11, 1958 . . . . *"Epochs in the History of Medicine"—Dr. Morris Fishbein, Professor Emeritus of Medicine, University of Chicago and University of Illinois, Chicago, Illinois*

DECEMBER 2, 1958 . . . . *"The History of Hospitals"—Dr. Charles U. Letourneau, Director, Program in Hospital Administration, Northwestern University, Chicago, Illinois*

JANUARY 13, 1959 . . . . *"The History of Gynecology"—Dr. A. F. Lash, Clinical Professor of Obstetrics and Gynecology, University of Illinois, Chicago, Illinois*

FEBRUARY 3, 1959 . . . . *"The History of Neurosurgery"—Dr. Percival Bailey, Distinguished Professor of Neurology and Neurological Surgery, University of Illinois, Chicago, Illinois*

FEBRUARY 24, 1959 . . . *"Notes About the Role of Physicians in Our Military History"—Dr. George S. Lull, Assistant to the President, American Medical Association, Chicago, Illinois*

MARCH 24, 1959 . . . . . *"Evolution of Medical Illustration"—Thomas S. Jones, M.S., Emeritus Professor of Medical and Dental Illustration, University of Illinois, Chicago, Illinois*

APRIL 14, 1959 . . . . . . *"The History of Surgery of Bones and Joints"—Dr. Edward L. Compere, Professor and Chairman of the Department of Orthopedic Surgery, Northwestern University and Chicago Wesley Memorial Hospital, Chicago, Illinois*

MAY 5, 1959 . . . . *"The Evolution of Otorhinolaryngology and Bronchoesophagology" — Dr. Francis L. Lederer, Professor and Head of Department of Otolaryngology, University of Illinois, Chicago, Illinois*

MAY 21, 1959 . . . . . . *"The History of Plastic Surgery"—Dr. Wayne B. Slaughter, Clinical Professor in Charge of Plastic Surgery, University of Wisconsin (Madison) and Stritch School of Medicine, Loyola University, Chicago, Illinois*

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

May 21-22 Huntsville, Alabama	Alabama Surgical Section U. S. Section, International College of Surgeons
May 28-30 Kiamesha Lake New York	New York State Annual Meeting U. S. Section, International College of Surgeons
June 1-3 Hamburg, Germany	German Section International College of Surgeons
June 19-21 Lyons, France	French Section International College of Surgeons
September Santos, Brazil	Brazilian Section International College of Surgeons
September 28 Chattanooga Tennessee	Tennessee Valley Medical Assembly U. S. Section, International College of Surgeons

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TWENTY-FOURTH ANNUAL CONGRESS

North American Federation

(Canada, Mexico, U. S. and Central American Sections)

International College of Surgeons

SEPTEMBER 13-17

CHICAGO, ILLINOIS

1960

TWELFTH BIENNIAL INTERNATIONAL CONGRESS

International College of Surgeons

MAY 15-18

ROME, ITALY

Brazilian Section Establishes Own International College of Surgeons Home

Prof. Dr. Mario Degni
President
Brazilian Section
International College of Surgeons

The Brazilian Section of the International College of Surgeons is now installed in its own College Home.

This enthusiastic Section has taken over the entire fifteenth floor of the handsome new building at the Rua Amaral Gurgel 429, adjoining the Rua Major Sertorio, in São Paulo, and had it laid out into a magnificent suite of rooms that lend themselves admirably to all the purposes of the Brazilian College Home.

Across the front of the building stretch the combined lengths of the auditorium and the library, both with wide windows admitting direct sunlight. In addition, the auditorium has a good sized balcony overhanging the Rua Amaral Gurgel.

The auditorium can seat approximately two hundred people. Audiences can thus be amply accommodated for lectures and educational courses. The Brazilian Section is in a position now to organize any number of conferences, scientific sessions and meetings of all kinds and to house them in comfort and with dignity.

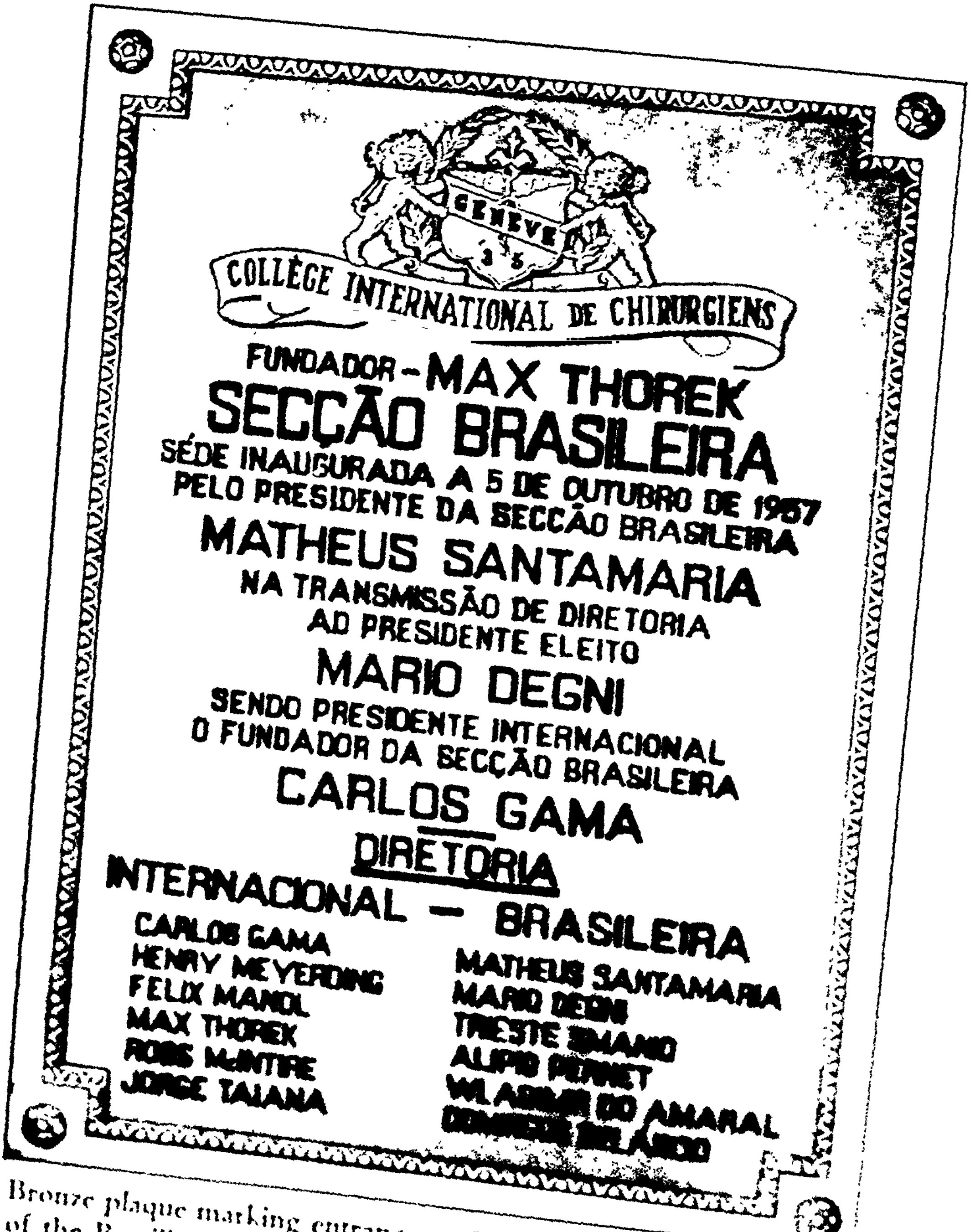
Twin elevators, situated in the center of the structure, provide easy access to the College floor. To their right is the spacious headquarters of the secretariat, provided with all the equipment necessary for the transaction of the Section's affairs and large enough for committee and business meetings.

The library, of course, can double as a lounge on social occasions, particularly so as it opens upon a commodious foyer, which is equipped for the serving of refreshments. Conveniently adjacent to the foyer are a cloak room, a serving pantry, a kitchen and a service hall.

These arrangements are ideal for social entertainment and will permit the Fellows of the Brazilian Section to receive their colleagues and their families at their own International College of Surgeons Home.

This College Home is the realization of a dream long held by the Brazilian Section. At the closing session of the Fourth National Congress held last year in Bahía, Salvador, the then presiding officer, **Dr. Matheus Santamaria,** symbolically opened the Home. It is now open in good earnest, ready to serve the membership of the Section and to make them feel truly at home in their own headquarters.

May the Brazilian College Home be blessed and may it serve the College in happy and fraternal unity to further growth and prosperity, to the end that surgical science and practice be advanced and the health and welfare of man be furthered.



COLLÈGE INTERNATIONAL DE CHIRURGIENS

GENEVE

FUNDADOR – MAX THOREK

SECÇÃO BRASILEIRA

SÉDE INAUGURADA A 5 DE OUTUBRO DE 1957
PELO PRESIDENTE DA SECÇÃO BRASILEIRA

MATHEUS SANTAMARIA

NA TRANSMISSÃO DE DIRETORIA
AO PRESIDENTE ELEITO

MARIO DEGNI

SENDO PRESIDENTE INTERNACIONAL
O FUNDADOR DA SECÇÃO BRASILEIRA

CARLOS GAMA

DIRETORIA

INTERNACIONAL —	BRASILEIRA
CARLOS GAMA	MATHEUS SANTAMARIA
HENRY MEYERDING	MARIO DEGNI
FELIX MANDL	TRIESTE [illegible]
MAX THOREK	ALIPIO PERNET
ROSS McINTIRE	WLADIMIR DO AMARAL
JORGE TAIANA	[illegible]

Bronze plaque marking entrance to College Home and Secretariat of the Brazilian Section of the International College of Surgeons in Sao Paulo

College as **Prof. Raymond Darget** of Bordeaux, **Dr. Henri-Marie Laborit** of Paris, **Prof. Agr. L. Léger** of Paris, and **Dr. Marc Iselin** of Paris, in honor of whom an international celebration was held last September;

HAITI, in which the Haitian Section of the International College of Surgeons has given concrete evidence of its leadership in the surgical activity of the Caribbean area;

MEXICO, where members of the College have had a year of unparalleled activity in surgical education;

SPAIN, where **Prof. Dr. Francisco Martin Lagos** and **Prof. Dr. Guillermo Núñez-Pérez,** of Madrid, conducted a series of postgraduate courses, and **Drs. Jose Soler Roig, Dr. Fernando Martorell** and **A. Puigvert,** of Barcelona, held a variety of seminars and advanced courses, and the

UNITED STATES, where intensive nation-wide educational activity was climaxed by the postgraduate courses offered by the College through the instrumentality of the Cook County Graduate School of Medicine in Chicago, as well as the annual lecture series on the History of Surgery and Related Sciences given at the International Surgeons' Hall of Fame.

Third Annual Around-the-World Postgraduate Refresher Clinic Tour

The year 1958 will be remembered as the year of the highly successful Around-the-World Postgraduate Refresher Clinic Course, not only by the members of the United States Section of the International College of Surgeons who, together with their wives, were members of the Tour, but also by the Fellows of the Sections which the Tour visited.

Tour List

Coordinator of Medical Activities
Dr. Arnold S. Jackson
Madison, Wisconsin
Tour Director
Mr. James H. Rebstock

Dr. Demetrius K. Apostle
Brooklyn, New York
Dr. and Mrs. W. Wayne Babcock
Bala-Cynwyd, Pennsylvania
Dr. and Mrs. Philip Barber
Porterville, California
Dr. and Mrs. Finis Cooper
Los Angeles, California
Dr. W. McK. Craig
Rochester, Minnesota
Mrs. Nina Fonville
Houston, Texas
Dr. and Mrs. Herbert T. Hayes
Houston, Texas
Dr. Paul Ledbetter
Houston, Texas
Dr. Theodore Morici
Passaic, New Jersey
Dr. and Mrs. Herbert J. Movius
Los Angeles, California
Mr. E. H. Mueller
Milwaukee, Wisconsin
Mr. Ellis J. Potter
Madison, Wisconsin
Dr. Curtice Rosser
Dallas, Texas
Dr. and Mrs. Geo. E. Sanderson
Stockton, California
Dr. and Mrs. Harold E. Simon
Birmingham, Alabama
Dr. and Mrs. Michael J. Stec
Scranton, Pennsylvania
Dr. Earl W. Thoma
Houston, Texas
Dr. and Mrs. J. L. Webb
Nelsonville, Ohio

Tour Lecturers

Members of the Tour who served as lecturers and the subjects they discussed were:

Arnold Jackson, Madison, Wisconsin
Diseases of the Thyroid
The Acute Surgical Abdomen
Surgery of the Biliary Tract
Winchell McK. Craig, Mayo Clinic
Head Injuries
Injuries of the Spine
Spinal Cord Tumors
Curtice Rosser, Dallas
Proper Management of Polyps of the Large Bowel

Herbert Hayes, Houston
Management of Large Benign Tumors of the Rectum
Finis Cooper, Huntington Park, Calif.
Large Pancreatic Pseudo-Cysts

The tour was received at scientific sessions held by the following sections of the International College of Surgeons:

JAPANESE SECTION,
Oct. 17-18, in Tokyo
HONGKONG SECTION
Oct. 27-28, in Hongkong
PHILIPPINE SECTION, Nov. 3, in Manila
THAILAND SECTION, Nov. 5, in Bangkok
INDIA SECTION, Nov. 15, in Bombay
TURKISH SECTION,
Nov. 21-22, in Istanbul
GREEK SECTION, Nov. 24, in Athens
ITALIAN SECTION, Nov. 28, in Rome
SPANISH SECTION, Nov. 30, in Barcelona

Activities at the Hall of Fame

The past year marked considerable growth in the number of important items acquired by the International Surgeons' Hall of Fame. Major gifts to the exhibits ame from the Netherlands, Austria, rance, Italy, Japan, Cuba, Spain and the nited States.

Visitors to the Hall were many and varied. Some were travelers from variou parts of the United States and some from abroad. Medical students, both on the graduate and on the postgraduate level came in groups. Also, in increasing number, there were younger students, premedical or in the medical sciences, who came to gain historical perspective in the art and science of surgery. And, surprisingly, many lay persons evidenced great interest in the exhibits. As an educational institution the International Surgeons' Hall of Fame has had a year of continued growth and development that is most gratifying.

The College takes pride also in the continuous lecture series of the School of the History of Surgery and Related Sciences which are given in the International Hall of Fame. The Hall of Immortals provides a setting for the lectures that is both appropriate and inspiring.

Conclusion

The year 1958 bore evidence of the strength and innate dynamic essence of the International College of Surgeons, auguring very well indeed for its continued growth and development.

Max Thorek

Gram's Stain

HAMILTON BAILEY,
F.R.C.S. (Eng.), F.A.C.S., F.R.C.S. (Edin.), F.I.C.S. (Hon.)
SHOLDEN, KENT, ENGLAND

Christian Gram
M.B., M.D.
1853-1938

It is interesting to know that the discoverer of Gram's method of staining bacteria, known to every final-year medical student and every doctor in all corners of the earth, was not a professional bacteriologist but a physician and a teacher of general medicine.

Christian Gram was born in Copenhagen, the son of Julius Gram, LL.D., professor of common law in the university of that city. In 1871, at the age of eighteen, Christian enrolled at the University of Copenhagen to study botany, and he pursued his botanical studies for three years before becoming a medical student. Throughout his life he cherished a love for, and knowledge of, plants; this knowledge formed the basis of his pharmacological interest, and his botanical training made him extremely familiar with the use of the microscope.

Gram graduated M.B. Copenhagen in 1878, and in 1882 he took the M.D. degree and gained the University medal with a thesis *On the Size of the Red Blood Corpuscles in Man.*

In this thesis he described the method of drawing blood into a capillary tube, sealing the ends of the tube, allowing the blood to clot, breaking the tube at the border of the clot and the serum, blowing out the serum onto a glass slide, and examining the erythrocytes. His measurements were of great exactitude, and are quoted to the present day. He also called attention to the increase in size of the erythrocytes in jaundice and in pernicious anaemia (macrocytes).

From 1883 to 1885 Gram studied bacteriology at various German universities, publishing as a short paper in *Friedländer's* Journal* his observations on a new differential staining method for bacteria (Gram stain). An unconfirmed tradition has it that this discovery was the result

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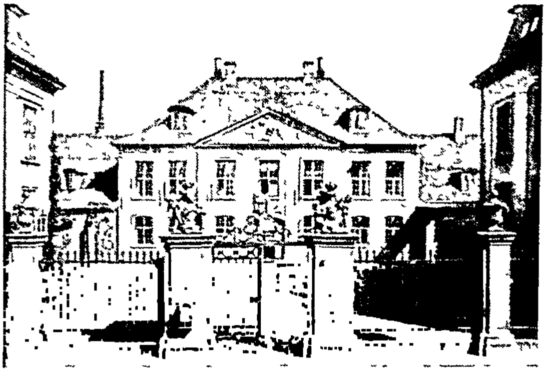
*Carl Friedlander, 1847-1887. Pathologist, Friedrichshain Hospital, Berlin.



King Frederick's Hospital
Copenhagen, Denmark

of an accident—Lugol's** solution being upset over a freshly stained bacterial smear with subsequent attempts to wash the iodine off with alcohol. This, if true, only goes to show that an epoch-making discovery is sometimes made by taking advantage of a fortuitous happening. The discovery which has perpetuated Gram's name was made while he was pursuing postgraduate studies in Berlin. Later the author of a German textbook on bacteriology annexed this discovery for glory of the Fatherland by the ingenious claim. "The Gram stain, which Christian Gram in 1884 discovered at Berlin." As Gram described in his paper "many cocci, particularly pneumococci and the cocci found in pyaemia, are stained intensely, whilst some few other bacteria, such as typhoid, are decolorized," to which the editor of the journal (Friedländer), quite contrary to what was the general custom, wisely and generously added a footnote "Undoubtedly posterity will be able to verify this."

On returning to Copenhagen, Gram became resident physician at the Kommunehospitalet and, for some years, district physician in Copenhagen. In 1891 he was appointed lecturer in pharmacology and, later in the same year, professor of pharmacology. In 1892 he became physician-in-chief at the Frederik's Hospital. In 1900 he changed his professorship of pharmacology for that of medicine. Gram's public and teaching duties did not leave him much time for scientific work, and his later publications were mainly clinical; he published altogether four volumes of clinical lectures.

I wish to acknowledge the help I have received in writing this biography from Prof. Dr. med. H. C. Gram, *Chief Physician, the Sundby Hospital, Copenhagen. My thanks are also due to* Messrs. H. K. Lewis and Co. Ltd., *Medical Publishers, London, for giving me permission to submit this biography, which is part of the 3rd edition of* Bailey *and* Bishop's Notable Names in Medicine and Surgery.

H. B.

Prof. Gram enjoyed a very large private practice, but he never allowed this to interfere with his hospital duties; each single patient in his department was seen and examined by himself with thoroughness and exactitude. He was much loved by his patients, and to his pupils he was at the same time an authoritative teacher and a good friend.

After his retirement, Prof. Gram spent the last fifteen years of his life in pursuit of his first love—botany, and in the vigilant prosecution of public health measures to prevent tuberculosis. Doubtless he felt the latter was his impelling duty, because he had lost his wife from pulmonary tuberculosis.

* * *

** [illegible]

ANNOUNCEMENT OF MANUSCRIPT AWARDS FOR 1959

BY THE DIVISION OF OBSTETRICS AND GYNECOLOGY OF THE INTERNATIONAL COLLEGE OF SURGEONS

The Division of Obstetrics and Gynecology of the International College of Surgeons is pleased to announce its second annual competition for two awards to be given the authors of manuscripts selected by the Prize Committee of the Section. The first award will be $500 and the second $300.

The winning manuscript in 1958 was submitted by Dr. Jose Filipe Afonso, a resident in Obstetrics and Gynecology at the King County Hospital, Seattle, Washington. It was entitled "Effect of Carbonic Anhydrase Inhibitors on Water and Electrocyte Metabolism in Toxemia of Pregnancy."

Dr. Afonso presented his prize-winning paper at the International Congress held in Los Angeles, California, on March 11, 1958.

The rules of the competition are as follows:

Fellows of the International College of Surgeons are not eligible. Contestants must be (a) interns, residents, or graduate students in the field of obstetrics and gynecology, or (b) engaged in the practice or teaching of obstetrics and gynecology. Contestants must hold the degree of Doctor of Medicine from an accredited college of medicine.

Manuscripts are not to exceed 5,000 words. They should be typewritten on one side of each sheet only, double-spaced and with generous margins. Illustrations, if indicated, should accompany the manuscript. Original drawings or glossy photographic prints should be numbered on the back and legends for the illustrations should be provided. A mark of identification, or the author's nom de plume, should be penciled on the back of each illustration. Tables should be numbered and submitted on separate sheets. References should be listed at the end of the article and numbered, naming the author of the reference, the periodical in which it appeared, the volume of the periodical, the pages on which the article was printed and the year of publication.

To conceal the identity of the author, *manuscripts must be submitted under an assumed name.* The manuscript must be accompanied by a sealed envelope, containing a card bearing the assumed name of the author, the title of the manuscript and the true name of the author, his degrees, titles and address. An original and three copies of each manuscript (carbon, photostatic, mimeographic or other) and illustrations must be submitted on or before June 1, 1959 to Dr. Harvey A. Gollin, Secretary of the Prize Committee, 55 East Washington Street, Chicago 2, Illinois.

The Committee on Prizes, under its rules and regulations, will judge the merits of each manuscript, select the two winners of the awards and submit the names and addresses of the authors to the Chairman of the Division of Obstetrics and Gynecology before August 10, 1959. The Chairman of the Division will notify the winning authors. If no submitted manuscript is deemed acceptable by the committee on prizes, no award will be made.

The two successful contestants will be asked to appear in person to participate in the regular scientific program of the Division on Obstetrics and Gynecology at the annual congress of the United States and Canadian Sections of the International College of Surgeons, in 1959. Personal expenses incurred by such participation must be borne by the winners. The awards will be made in cash by the Chairman of the Division during the course of the 1959 Congress.

The Secretary of the Committee on Prizes will return the unsuccessful contributions to their respective authors. Manuscripts which, in the opinion of the Committee, are entitled to the awards will become the property of the Division on Obstetrics and Gynecology, for publication in the official Journal of the International College of Surgeons. If the Editors of the Journal reject them for publication, the authors may submit them to any periodical of their choice.

The purpose of this contest is to advance the art and science of obstetrics and gynecology in accordance with the principles of the International College of Surgeons, and, with the primary aim of the College, to extend the frontiers and elevate the standards of all branches of surgery.

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Pittsburgh, Pennsylvania

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Committee on Prizes
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A. H. Daro, M.D., Secretary
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Committee on Prizes
Chicago, Illinois

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Canadian Section
Vancouver, Canada

Hunter Holmes McGuire

FREDERICK STENN, M.D., F.I.C.S.
CHICAGO, ILLINOIS

Frederick Stenn
M.D., F.I.C.S.

The name of Hunter Holmes McGuire belongs in the Hall of Fame of American medicine with the names of such men as Philip Syng Physick, Benjamin Rush, Ephraim McDowell, John Drake, Oliver Wendell Holmes, Walter Reed, and William Beaumont. McGuire was a soldier, humanitarian and surgeon of supreme merit.

He was born in Winchester, Virginia, in 1835. His grandfather, Captain Edward McGuire, served in the Continental Army, and his father, Hugh H. McGuire, was a surgeon in the Confederate Army. His brother William, his son Stuart, his grandson, all followed the path [illegible] nephew H. Hunter McGuire and the latter's Hunter pr[illegible]

Jackson. In 1853, General Jackson was mistaken for a Union soldier and shot by his own North Carolina sharpshooters at Chancellorsville. He bled profusely with lacerations and fracture of the left arm.

In a beautiful and tender description of the "Last Wound of the Late General Jackson (Stonewall)," recorded in the *Richmond Medical Journal*, McGuire related how he amputated the General's left arm under chloroform anesthesia, how he attended him for the next eight days and how his illustrious patient fell into delirium before he died, crying out: "Order A. P. Hill to prepare for action! Pass the infantry to the front rapidly, tell Major Hawks . . . ."

After Jackson's death McGuire became chief surgeon of the 2nd Corps of the Army of Northern Virginia and, later, medical director of the Army of the Valley. He was at the side of General Robert E. Lee when the Confederate cause was lost at Appomattox.

But McGuire is chiefly remembered for

[illegible]

Statue in Memory of
DR. McGUIRE
Capitol Square
Richmond, Virginia

his establishment of a code of honor among medical people on the battlefield. In May 1862 at the Battle of Winchester he devised and put into effect the plan of releasing captured medical officers to their respective commands, an idea that was enthusiastically adopted by the Union forces. McGuire also established an ambulance corps in the spring of 1862—consisting of four men for each company, each wearing a conspicuous badge. In this same year Henri Dunant of Geneva wrote the immortal booklet *Un Souvenir de Solferino,* which inspired the founding of the International Red Cross in 1863.

As a peacetime surgeon McGuire was among the first, with Sir Henry Thompson and John Packard, to practice suprapubic cystotomy for prostatic hypertrophy and a pioneer in the ligation of the abdominal aorta in 1868. Sir Astley Cooper did such a ligation in 1817. He was a dexterous, rapid surgeon with excellent judgment, and among the first users of Lister's antiseptic technic. In 1892 he founded the University College of Medicine, which in 1912 was consolidated with the Medical College of Virginia in Richmond, and he also established St. Luke's Hospital of Richmond. In his presidential address before the American Medical Association in Milwaukee in 1893 he recommended the establishment of a national department of health. As a citizen he vigorously attacked false statements in books relating to the history of the Civil War.

His death in 1900 was mourned by the whole of Richmond. Sir William Osler was a pall-bearer. Dr. McGuire's memory is perpetuated by the bronze statue that adorns Capitol Square in Richmond, next to his beloved "Stonewall" Jackson.

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February 1-15, 1959

dealing with
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Thromboangiitis obliterans
Aneurysms and arteriovenous fistulas
Thrombophlebitis and pulmonary embolism
Chronic venous insufficiency
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(For Postgraduates)
Under the Auspices of the
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COURSE XX
POSTGRADUATE SEMINAR
on
Diseases of the Bladder
Symptomatic and Surgical Aspects

Statue in Memory of
DR. McGUIRE
Capitol Square
Richmond, Virginia

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UROLOGIC INSTITUTE

Dr. A. Puigvert, F.I.C.S., Director

COURSE XX

POSTGRADUATE SEMINAR
on
Diseases of the Bladder
Symptomatic and Surgical Aspects

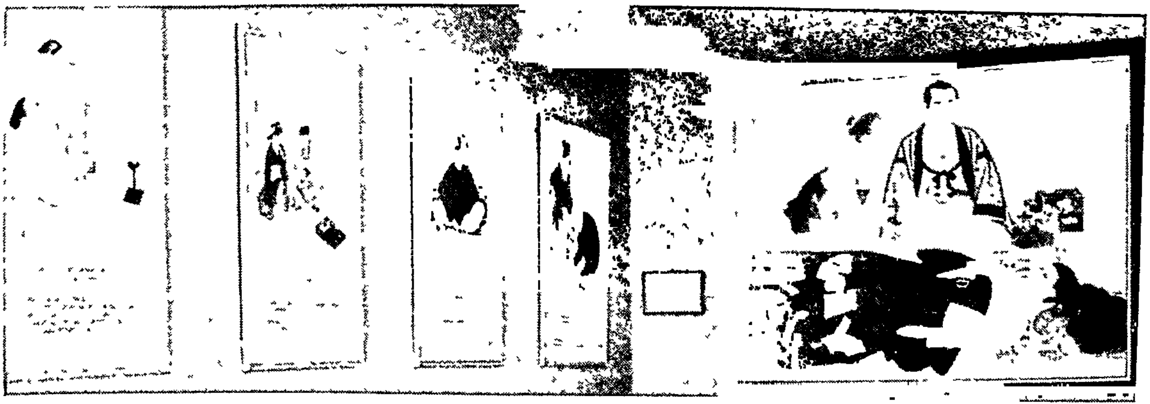
April, 1959

These seminars, lasting six full days, from 8:30 a.m. to 7:00 p.m., include practice in endoscopy and urography.

Those registered for any seminar will be limited in number and may continue their work at the Institute for three months.

Japanese Gift to Hall of Fame

Dr. Komei Nakayama, professor of surgery at the University of Chiba in Japan and secretary of the Japanese Section of the International College of Surgeons, together with Mrs. Nakayama and Dr. Max Thorek, studying five original paintings depicting the development of surgery in Japan, gift of the Japanese government to the Hall of Fame



A corner of the Japanese Room in the International Surgeons' Hall of Fame, the new paintings at the left

From the Executive Director's Notebook

PROSPECTS FOR THE NEW YEAR

Dr. Ross T. McIntire

With 1958 and its activities now a memory, we turn our attention to the new year. The Southeastern Regional Meeting brought together a brilliant array of speakers for the scientific program at Miami, January 4-7. Miami is one of the great vacation centers of our nation, and full advantage was taken of the many attractions this delightful area has to offer.

Those responsible for this meeting, **Dr. Harold Hallstrand** and members of his various committees, are to be congratulated for a most delightful meeting at the lovely Americana Hotel.

Congress of the North American Federation

The surgical Congress to be held in Chi-

State and Regional Meetings Being Organized

Plans are going forward for certain state meetings which will be commented upon later.

Announcement of the New York State Surgical Section meeting for 1959 will be forthcoming in the February issue of the Bulletin.

Dr. Horace Ayers, regent for the state of New York, informs me that under the new chairman of arrangements, **Dr. Milton Weinberg**, of Jackson Heights, Long Island, a meeting will be set up for late May at the Concord Hotel.

In view of the successful meeting held there last year, it is thought that many will wish to attend.

The 1960 International Congress in Rome

One thing always to keep in mind is the International Congress in Rome, Italy, May 15-18, 1960. **Prof. Pietro Valdoni, Prof. A. Mario Dogliotti** and **Prof. Giuseppe Bendandi**, with their committees, are busily engaged in seeing that this will

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EUROPE—1959

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United States Section

THE PRESIDENT'S MESSAGE

Qualification Standards of the College

Dr. Edward L. Compere

No surgical society, academy, or college has higher standards of qualification for membership or qualified fellowship than the International College of Surgeons. Our qualification requirements have been published in the *Bulletin*, and reprints of these requirements are sent to candidates for membership and to regents, vice-regents, and members of state committees for accreditation. During the years that I have been Secretary of the Qualifications, Examination, and Accreditations Council, we have been most careful in considering each applicant recommended by state or regional committees. In addition to requiring high standards of training and experience as surgeons, we insist upon adherence to the principles of ethics adopted by the House of Delegates of the American Medical Association.

High Calibre of Candidates for Fellowship

As an example of how careful the Qualifications and Examination Council has been, I point to the fact that of the forty-three candidates who were elected Qualified Fellows of the College by the Executive Council December 6, 1958, thirty-[illegible] were Diplomates of one of the American Boards of Surgery. [illegible] were Fellows of the American College of Surgeons and [illegible] [illegible] of the American [illegible] [illegible]

lows of the American College of Surgeons. No one younger than forty years of age can be elected Qualified Fellow unless he has passed one of the American Boards of Surgery.

Men over forty and younger than fifty years of age can become Qualified Fellows by taking a written examination provided the letters of recommendation concerning these men are favorable, and the regent in the state in which the man lives and practices recommends him for Qualified Fellow. Men who are more than fifty years of age who have excellent letters of recommendation may become Qualified Fellows after passing an oral examination.

Eligibility Qualifications for Junior Membership

Candidates for junior membership to be eligible must be graduates of an approved medical school; must have completed at least one year in an approved surgical residency; and must state in writing their intent to continue training in surgery to qualify, in time, for the American Board of Surgery or one of the American Boards of surgical or related specialties, and to strive to become a Qualified Fellow of the International College of Surgeons. Candidates for junior membership must present letters of recommendation from surgeons who [illegible] members of [illegible] [illegible] professor in 1945. He now is emeritus professor of surgery at Northwestern University Medical School.

In 1932 he was instrumental in establishing the Cook County Graduate School of Medicine. Over twenty-five thousand medical men have taken work at the school.

He also somehow finds time to address medical societies and to contribute to the literature of his chosen fields of interest.

Brilliant as is Dr. Meyer's professional career, it is more than matched by his personal attributes. My experience with him in stressful moments has proved the man. He pays no lip service to virtue, but by deed, example and leadership enlightens minds and leads to constructive action. Friendship, loyalty and responsibility are more than words to him. They are the dominant motifs of his pattern for living.

It was not an easy task, even for one so generously endowed by Providence with multi-faceted abilities, to achieve the position Dr. Meyer has as surgeon, teacher, administrator and public spirited citizen. He is in the prime of life. May his usefulness to surgery, to the community and to humanity continue *ad multos annos* and may he find much joy and fullness in his service to the world.

M. T.

Qualifications for Membership

United States Section **International College of Surgeons**

The Qualification and Examination Council for Membership in the United States Section of the International College of Surgeons has published a booklet of qualifications required of candidates applying for the various types of membership offered by the International College of Surgeons. For the convenience of the many surgeons who have expressed interest in membership in the International College, this booklet is available upon request.

Qualification Council
United States Section—International College of Surgeons
1516 Lake Shore Drive, Chicago 10, Illinois

Date

Please mail me "Qualifications for Membership" information.
☐ Fellow ☐ Associate ☐ Junior (please indicate)
My practice consists of: (please check)

☐ Anesthesiology
☐ General Surgery
☐ Colon and Rectal Surgery
☐ Neurologic Surgery
☐ Ob. and Gyn. Surgery
☐ E. E. N. T. Surgery
☐ Orthopedic Surgery
☐ Plastic Surgery
☐ Radiology
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Dr. Max Thorek Semmelweis Lecturer

Dr. Max Thorek, Founder of the International College of Surgeons, delivered the 1958 Annual Semmelweis Lecture before the American-Hungarian Medical Association, Inc., at the New York Academy of Medicine, in New York City, on Friday, November 14. His lecture dealt with *Impending Death Under Anesthesia (Causes, Symptoms and Therapy).*

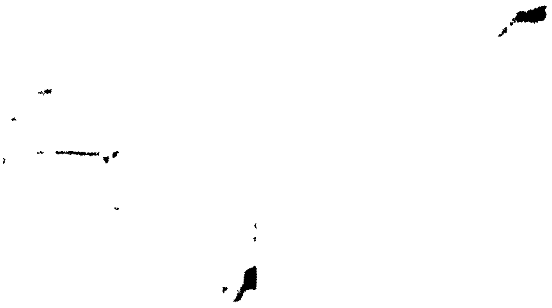
Dr. Thorek, on this occasion, was presented with the Association's annual Semmelweis medal and scroll.

ABOVE: Dr. Max Thorek delivering the 1958 Semmelweis Lecture at the New York Academy of Medicine, November 14, 1958

BELOW: Dr. Max Thorek with Dr. Peter Halberg, secretary of the American-Hungarian Medical Association, at the Semmelweis Lecture

ABOVE: Dr. Alexander Borota, president of the American-Hungarian Medical Association; Dr. Max Thorek, and Prof. Bela Schick, a former recipient of the Semmelweis Award

BELOW: Dr. Max Thorek accepting Semmelweis Award from President Borota



The Man and his Portrait

DR. NICHOLAS A. MICHELS HONORED BY GRADUATING STUDENTS

The 1958 graduating class of the Jefferson Medical College, in Philadelphia, Pennsylvania, presented as its gift to the college a portrait of its favorite professor, **Dr. Nicholas A. Michels,** F.I.C.S., professor of anatomy and senior member of the Daniel Baugh Institute of Anatomy.

The portrait, painted by **John C. Johansen,** one of America's greatest contemporary portrait painters, is both an excellent likeness of Dr. Michels, who is shown standing, in his academic robes, and a striking presentation of the essential nature of the modern man of science.

A native of St. Paul, Minnesota, Dr. Michels received his undergraduate college education at St. Thomas Military College in St. Paul. He received his M.A. degree from the University of Minnesota, and his doctorate, *maxima cum laude,* from the University of Louvain, in Belgium, where he worked under the eminent cytologist, Victor Gregoire. Later he studied at the Sorbonne, in Paris, and, with Dr. Ferrata, the famous hematologist of Italy, at Siena. Returning to the United States in 1923, he studied hematology with Dr. Alexander Maximow, a Russian histologist, at the University of Chicago, and then became associated with the world-famous Dr. H. Globus, neuropathologist at Mt. Sinai Hospital in New York.

Dr. Michels has taught at the St. Louis Medical School, at the Creighton University Medical School in Omaha, and, since 1929, at Jefferson.

All this while he has continued his research, his writing and his participation in the scientific world's effort to increase knowledge and better the condition of mankind.

Dr. Michels Beside his Portrait

Characteristically, Dr. Michels says of himself,

"The man who gave me my start in science was **Dr. Hal Downey,** now retired as Professor Emeritus, of the University of Minnesota Medical School, known as the father of American hematology. In 1918 he gave me the problem of the mast cells for my M.A. thesis. For fifteen years, both here and abroad, I worked on mast cells, studying them from fish to man. My studies proved the mast cell to be not a mucoid degenerating cell (Pappenheim and others) but an independent functional blood cell.

"The man who convinced me to undertake teaching anatomy in a medical school as a life's career was **Dr. H. Globus,** of

Mt. Sinai Hospital in New York, founder of the *Journal of Neuropathology and Experimental Neurology*, who gave us the classification of *spongioblastomas*. I did investigative work with Dr. Globus on the small round cell infiltrations of the central nervous system in encephalitis and poliomyelitis (in a terrific epidemic thereof in New York City, 1925-1927).

"The man who brought me to Jefferson was **Dr. Parson J. Schaeffer**, director of the Daniel Baugh Institute and professor of anatomy from 1941 to 1948. His work on the paranasal sinuses is world-known, and as yet unsurpassed."

References to the many journals in which Dr. Michel's numerous research papers have been published are listed in *Who's Who In American Science*, 1956, and in *Leaders in American Education*, 1958.

Dr. Michels has served on national and international panels and appeared at scientific congresses here and abroad. He is a member of the American Association of Anatomists and of the Society of Experimental Biology and Medicine.

In 1935 Dr. Michels was elected a member of the Allied Science Section of the United States Section of the International College of Surgeons.

THE JOURNAL AND BULLETIN
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International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)

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Dear Doctor:

We are preparing a Directory of the membership of the International College of Surgeons in the United States and the rest of the world. This will include also the Constitution and Bylaws of the College, information on qualifications for membership, a description of the activities of the College, as well as a full list of members, alphabetically and regionally arranged, with pertinent information about each member.

The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

We would appreciate your cooperation. Please return the attached subscription blank in the enclosed self-addressed envelope, and oblige

Yours sincerely,

PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
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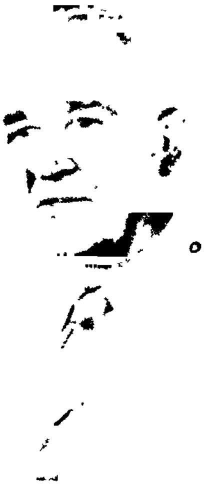
News Briefs

DR. EARL INGRAM CARR HONORED BY CLEARY COLLEGE

Dr. Earl Ingram Carr, F.A.C.S., F.I.C.S., of Lansing, Michigan, member of the board of the United States Section of the International College of Surgeons and a former regent for the state of Michigan, was one of five distinguished recipients of honorary degrees from Cleary College in Ypsilanti, Michigan.

Dr. Earl Ingram Carr
F.A.C.S., F.I.C.S.



Dr. Clement L. Martin
F.A.C.S., F.I.C.S.

DR. CLEMENT L. MARTIN PRESIDENT OF TRI-STATE PROCTOLOGIC SOCIETY

Dr. Clement L. Martin, F.A.C.S., F.I.C.S., D.A.B., of Chicago, treasurer of the International College of Surgeons, was elected president of the Tri-State Proctologic Society, December 1, 1958. The membership of the Society comprises Board-certified proctologists of Illinois, Indiana and Wisconsin.

INTERNATIONAL COLLEGE OF SURGEONS

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DR. WINCHELL McK. CRAIG PARTICIPATES IN U. S. - EGYPT CONFERENCE

Dr. Winchell McK. Craig, F.A.C.S., F.I.C.S. (Hon.), emeritus head of the Section of Neurologic Surgery in the Mayo Clinic, took part as an honorary consultant in a joint meeting of a U. S. Naval Medical Research Unit with members of the Egyptian Public Health Service in Cairo, Egypt.

DR. RICHARD A. PERRITT COMPLETES LECTURE TOUR

Dr. Richard A. Perritt, F.I.C.S., member of the senior attending staff, department of ophthalmology, Chicago Wesley Memorial Hospital, delivered an address at the International Congress of Ophthalmology in Brussels on September 9.

Between September 12 and October 22, Dr. Perritt gave a number of talks under the auspices of the Asia Pacific Society of Ophthalmology. He addressed meetings in Cairo, Karachi, New Delhi, Bombay, Madras, Calcutta, Colombo, Bangkok, Hongkong, Manila and Tokyo.

DR. BEN-HENRY ROSE HONORED BY GOVERNMENT OF HAITI

At a special ceremony held on September 19, **Ben-Henry Rose**, M.D., F.I.C.S., was honored by the Haitian Government with the medallion and certificate of his appointment as an Officer in the National Order of Merit and Honor of the Republic of Haiti for meritorious professional services rendered to Haitians upon his several visits to that country and to their compatriots residing in New York City.

The investiture was performed by a special envoy, **M. Lucien Daumec**, who was sent by **President Duvalier** for this occasion.

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SECOND VICE-PRESIDENT

Mrs. D. H. Downey
Dover, Ohio

THIRD VICE-PRESIDENT

Mrs. Herbert W. Goebert
Coatesville, Pennsylvania

RECORDING SECRETARY

Mrs. Adolph Maller
Chicago, Illinois

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Mrs. Clement L. Martin
Chicago, Illinois

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Mrs. Jerome J. Moses
Chicago, Illinois

TREASURER

Mrs. Louis L. Plzak
Hinsdale, Illinois

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

Introducing Mrs. Park Niceley

Mrs. Earl Ingram Carr

By the time this message reaches you, the first month of the new year will be well on its way. *Well* on its way we can hope, to a year full of achievement for the College and most especially for our Auxiliary.

As the year goes by, I expect to have you meet, in the *Bulletin,* as many of your Board as possible. And after telling you of the highly successful Mid-Atlantic Regional Meeting, I shall introduce you to your President-Elect, **Mrs. Park Niceley.**

The Regional Meeting at the charming Homestead was sure of success under the direction of **Dr. Elbyrne Gill** and his delightful family. Many of our members were there, and they inspired a number of those who had not joined the Auxiliary previously, to become members at that time. The camaraderie and friendship, always so evident at the Regional Meetings, make them a delight to attend. Four of our Board members, **Mrs. Niceley, Mrs. Downey, Mrs. Goebert,** and **Mrs. Weigel,** were present.

The Ladies' Committee in charge of Women's Activities consisted of **Mrs. Elbyrne Gill,** Chairman, **Mrs. Russell Buxton, Mrs. George Bourne, Mrs. Francis McGovern** and **Miss Jean Gill.** We are grateful to them all and especially to Miss Gill, who worked assiduously, registering and charming the doctors and their wives at one and the same time.

Now here is Mrs. Niceley to tell you of her work and accomplishments as membership chairman for 1958 and until September 1959, when she will assume the office of president. Those of you who know her need no word from me to emphasize her ability and graciousness. She will speak for herself in the following paragraphs. *Ruth Smith Carr*

Our Membership Program

To increase the membership of the Woman's Auxiliary is of prime importance, for our interest in the exchange scholarships for graduate students and medical research is ever being increased.

The financing of our projects, in this field of international relations, rests entirely in the hands of each surgeon's wife, for our financial resources are derived from the annual dues.

The membership drive has been set up with Mrs. D. H. Downey, our second vice-president, ably assisting the chairman, and eight of the board members who have graciously consented to serve as regional chairmen.

The regional chairmen and their assigned states are as follows:

Mrs. M. Leopold Brodny
47 Arlington Road, Brookline, Massachusetts
Maine, Vermont, New Hampshire, Massachusetts, Connecticut

Mrs. Virgil T. DeVault
1037 26th Road, South, Arlington 2, Virginia
New York, New Jersey, Pennsylvania, Maryland, District of Columbia

Mrs. Park Niceley
Weisgarber Road, Route #15, Knoxville, Tennessee
Delaware, Virginia, West Virginia, Kentucky, Tennessee

Mrs. William G. Thuss, Sr.
2837 Southwood Road, Mountain Brook, Birmingham, Alabama
North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana

Mrs. Casey E. Patterson
5205 Brookview Drive, Dallas, Texas
Arkansas, Missouri, Kansas, Oklahoma, Texas

Mrs. Arnold S. Jackson
1901 Adams Street, Madison 5, Wisconsin
Ohio, Indiana, Illinois, Wisconsin, Michigan, Minnesota, Iowa

Mrs. Leo J. Adelstein
1608 South Norton Avenue, Los Angeles 4, California
New Mexico, Colorado, Utah, Arizona, Nevada, Lower California

Mrs. Lester Johnson
11300 Enchanto Vista, San Jose 27, California
Washington, Oregon, Idaho, Montana, Wyoming, North Dakota, South Dakota, Nebraska

It is our desire that each lady renew promptly her membership when she receives the renewal notice in January, so that a follow-up letter will not be necessary. Also a challenge is extended to each member to actively seek to add a new member to our roster. We all have friends whose husbands are members. Let us secure their membership and each play an active part in this important membership drive.

Mrs. Park Niceley

To those of you who have not been a member of the Woman's Auxiliary, we do extend a cordial invitation for you to affiliate with us this year.

The dues for membership are ten dollars a year and we ask that you send your check now to the chairman of your region, so that we can extend the hand of Auxiliary friendship to you.

Virginia [illegible]

I am interested in furthering the program of the Auxiliary to the International College of Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

NAME:

ADDRESS:

Make check payable to The Woman's Auxiliary, United States Section, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois

Mrs. [illegible], Treasurer

[illegible]

Memorial Fund

OF THE

Woman's Auxiliary of the

United States Section

INTERNATIONAL COLLEGE OF SURGEONS

People long to perpetuate the memory of a loved one who has been lost in death. The Woman's Auxiliary of the International College of Surgeons has established a Memorial Fund for such a purpose. There is a permanent record in the archives of the organization of all those for whom such a memorial has been established. The fund will be used for medical research and scholarships.

When a gift to the Memorial Fund is received by the chairman, a dignified and beautiful card of acknowledgment is promptly mailed to the person designated by the donor. Please make checks payable to the Memorial Fund, *giving the name of the deceased honored by the contribution and the name* and address of the person to whom the card of acknowledgment is to be sent.

Not only members of the International College of Surgeons and of the Woman's Auxiliary are welcome to use the Memorial Fund to honor deceased relatives and friends, but anyone who wishes to pay a final tribute in this meaningful manner may do so.

Lucille Le Sage
CHAIRMAN

……

WOMAN'S AUXILIARY MEMORIAL FUND

Donor ____

____

____

Honoring ____

Notify ____

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Send checks payable "Memorial Fund"
Mrs. Robert Le Sage, Chairman
Shores Acre, Dixon, Illinois

Section News

CHINA-HONGKONG

The China-Hongkong Section held a general meeting on December 4, 1958, and elected the following officers:

Dr. Kenneth K. L. Hui
President

Dr. S. H. Lin
Vice-President

Dr. S. C. Chan
Hon. Treasurer

Dr. Roy Mar
Hon. Secretary

COUNCIL MEMBERS

Dr. Arthur Woo
Dr. John Gray
Dr. Stephen D. Sturton
Dr. Hans Tang
Dr. E. H. Paterson

The Section also took action to elect Dr. Arnold S. Jackson and Dr. Curtice Rosser as honorary members of China-Hongkong Section.

ECUADOR

Dr. Gabriel Panchana Cucalon, secretary; Dr. Eduardo Ortega Moreira, president-elect; Dr. Teodoro Maldonado Carbo, president; Dr. Jose Ramirez Dueñas, vice-president, and Dr. Francisco Rizzo Velasco, treasurer

Dr. José Ramirez Dueñas, of Guayaquil, a Fellow of the International College of Surgeons since 1952, together with **Dr. Eduardo Ortega Moreira**, F.I.C.S. (1953), organized a Section of the College in Ecuador on October 28, 1958, with an enrollment of thirty [illegible] members.

After approval by the [illegible] Executive Council [illegible] [illegible] December 6, 1958.

Dr. Teodoro Maldonado Carbo [illegible] [illegible] president of the Ecuador Section.

The other elected officers are:

Dr. Eduardo Ortega Moreira
President-Elect

Dr. José Ramirez Dueñas
Vice-President

Dr. Francisco Rizzo Velasco
Treasurer

Dr. Gabriel Panchana Cucalon
Secretary

Maj. Gen. Sanguan Rojanavongse
M.D., D.Sc., F.R.F.P.S.G., F.I.C.S.
President

Proper Management of Polyps of Large Bowel

Dr. Curtice Rosser

Management of Large Benign Tumors of the Rectum

Dr. Herbert Hayes

Large Pancreatic Pseudocysts—Motion Picture

Dr. Finis Cooper

The afternoon session was devoted to papers presented by members of the Thai Section. The program was as follows:

Incidence of Thyroiditis in Thailand

Dr. Tinrat Stitnimankarn

Cysticercus in Anterior Chamber of the Eye

Dr. Samran Wangspa

Sturge-Weber Syndrome

Dr. Kobchai Promindaroj and
Dr. Sunit Chemsiriwatana

Prof. Daeng Kanchanaranya
M.D., D.Sc. in Med. (Hon.), F.I.C.S.
President-Elect and Vice-President

Perforation of the Ear Drum

Dr. Sadab Dhiraputra

Liver Biopsy by Vim's Needle

Dr. Kampee Mallikamas, Dr. Sutham Tappawongse and Dr. Niyom Towong

Dr. Luang Binbakya Bidabhed, M.D., D.Sc. in Med. (Hon.), F.I.C.S. (Hon.), Under-Secretary of State for Public Health, presiding over the Opening Ceremony, November 5, 1958

Medical News Front

Major General Oliver K. Niess

GENERAL NIESS NAMED AIR FORCE SURGEON GENERAL

Major General Oliver K. Niess has assumed office as Surgeon General of the United States Air Force. As Command Surgeon of the Pacific Air Forces in Hawaii, he was instrumental in establishing medical care for United States nationals throughout southeast Asia.

GOULD LARYNGOLOGIC AWARD

The International Committee for the Gould Award announces that the 1958 prize has been awarded to **Prof. Fumio Nakamuro, M.D.**, of the Kyoto Prefectural Medical College, Kyoto, Japan, for his electrophysiologic studies of laryngeal function.

POSTGRADUATE COURSE ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the twelfth Annual Postgraduate Course on Diseases of the Chest at the Sheraton Hotel, Philadelphia, March 30-April 3, 1959.

The most recent advances in the diagnosis and treatment of heart and lung diseases, medical and surgical aspects, will be presented.

Tuition for this five-day course will be one hundred dollars, including luncheon meetings.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CHILEAN RESEARCHER TOURING UNITED STATES

Dr. Hector Orrego Puelma, head of the medical department at the Hospital del Torax of Santiago and director of the Graduate Medical School of the University of Chile, is touring the United States and visiting hospitals and laboratories at the invitation of the Arlington-Funk Laboratories Division of U. S. Vitamin Corporation and the Arlington-Funk Laboratorio de Chile, Inc.

Maj. Gen. Sanguan Rojanavongse
M.D., D.Sc., F.R.F.P.S.G., F.I.C.S.
President

Proper Management of Polyps of Large Bowel

DR. CURTICE ROSSER

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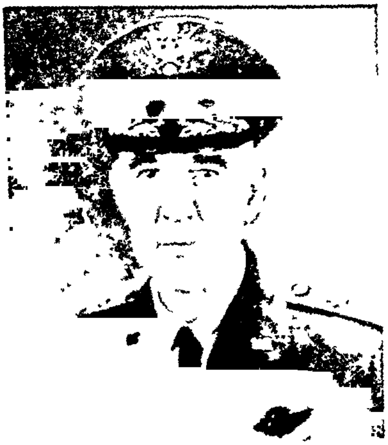

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The Gould Award is presented annually for outstanding research in laryngology.

The International Committee for the Gould Award for 1959 will consist of **Sir Victor Negus**, 149 Harley St., London, W. 1; **Prof. Cotoji Satta**, No. 111 Morikawa-cho, Bunkyo-ku, Tokyo; and **Dr. Hans von Leden**, 30 North Michigan Avenue, Chicago 2, Illinois.

The amount of the award has been increased to $[illegible]

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Dr. Orrego, during his tour, engaged in a fruitful exchange of information and opinion with **Dr. Casimir Funk**, the internationally famous biochemist and originator of vitamin therapy, who at present is devoting himself to cancer research. Dr. Orrego was accompanied on his inspection of the laboratories where Dr. Funk conducts his research by **Mr. H. B. Burns**, president and chairman of the board of U. S. Vitamin Corporation, and by the vice-president of that corporation, **Mr. I. A. Botty**.

FACTS ABOUT THE COLLEGE AND ADVANTAGES OFFERED ITS MEMBERS

THE INTERNATIONAL COLLEGE OF SURGEONS

Is the only International College of Surgeons in existence

Is the only *World Federation* of General Surgeons and Surgical Specialists in existence

Is a member of the Council for Coordination of International Congresses of Medical Sciences Activities

Is a Founder Corporate Member of the World Medical Association

Maintains highest possible professional and ethical standards

Has Sections in 63 nations and 13,000 members

Has active Divisions in all Surgical Specialties

Publishes a monthly scientific *Journal* and *Bulletin* providing a world-wide forum for surgeons

Offers Continuous Postgraduate Courses in many parts of the world

Maintains International Surgeons' Hall of Fame and School of the History of Surgery and Related Sciences

Holds frequent and important Congresses on the International, Federation and National levels as well as significant Regional Meetings

Sponsors Annual Around-the-World Postgraduate Clinic Courses

Offers Scholarships, Grants to residents, Grants for research, and Scholarship Loans to promising surgical students

Issues Travel Credentials (International Passports), which open doors to its members in hospitals, clinics and medical schools throughout the world

Offers comprehensive group health, accident, malpractice and life insurance coverage

Is devoted to humanitarian endeavors regardless of race, creed or color

For details concerning requirements for membership write to

Secretariat—International College of Surgeons
1516 Lake Shore Drive • Chicago 10, Illinois

In Memoriam

FERDINAND AUGUST LEOPOLD JOSEPH VERBEEK

M.D., F.I.C.S.

1902-1958

Dr. Ferdinand August Verbeek, F.I.C.S., of Groningen in the Netherlands, died on October 16, 1958.

Dr. Verbeek was born in Veghel, in North Brabant, on December 18, 1902. He was educated at the Gymnasium (Canisius College) at Nijmegen, graduating in 1921, and at the University of Utrech. He was graduated from the University in 1930 with the degree of Doctor of Medicine. He had by that time done a great deal of work in his chosen specialty of neurosurgery.

He then spent three years (1932-1934) in the United States. For two and a half years he served as assistant in the neurosurgical department of the Johns Hopkins Hospital under Dr. Walter Dandy. He spent three months in Boston at the Peter Brent Brigham Hospital, working under Dr. H. Cushing; six weeks in Philadelphia under Dr. Charles Frazier, and four weeks in Rochester, Minnesota, under Drs. A. Adson and W. McK. Craig.

RICHARD ALLEMANN

M.D., F.I.C.S.

Zurich, Switzerland

1883-1958

The Swiss Section of the International College of Surgeons has sustained an irreparable loss in the death of Prof. Richard Allemann, one of the most devoted Fellows of the Swiss Section. He was taken from us at the height of his activities.

Prof. Allemann was born in 1883 at Solothurn and received his medical education in Geneva, Zurich and Paris. Besides being a general surgeon, he also acquired a great deal of knowledge of urology.

In 1927 he settled in Zurich. His innate kindness, tireless devotion to his patients and ingratiating personality brought him a large private practice. He was a man of high intelligence. His mind was both keenly analytic and brilliantly original

In addition to his tremendous practice Prof. Allemann unremittingly carried on his scientific investigations. He contributed forty-one original works to the literature of urology.

In Memoriam

JOSEPH BERNARD MURPHY

B.Ch., B.A.O., F.A.C.S., F.I.C.S.

1899-1958

Dr. Joseph Bernard Murphy, F.A.C.S., F.I.C.S., of St. John's, Newfoundland, Canada, died very suddenly on October 9, 1958.

Dr. Murphy was born in Newfoundland on April 9, 1899, and was educated at St. Bonaventures College and at St. Francis Xavier College. He then studied medicine at the National University of Ireland, being graduated in 1927. His academic degrees include the M.B., B.Ch., and B.A.O.

He served a two-year internship and a five-year residency at the St. John's General Hospital. For at least twelve years thereafter Dr. Murphy annually spent six weeks in attendance at the Lahey Clinic and the Carney Hospital in Boston or at the French, Beth Israel, Mt. Sinai, Memorial, Harlem and Polyclinic Hospitals in New York.

Dr. Murphy's specialty was general surgery. He was surgeon-in-chief at St. Clare's Mercy Hospital and in Service B at St. John's General Hospital. He also was visiting surgeon at the Grace, Mental and Merchant Navy Hospitals.

He was a member of the British Medical Association, of the Newfoundland Medical Association, and the American College of Surgeons.

Dr. Murphy was elected to membership in the International College of Surgeons in 1948. He was highly esteemed, and had only recently accepted the honor of becoming a Regent for the province of Newfoundland.

In his early days Dr. Murphy was a keen sportsman, especially so in baseball. He was also an ardent fisherman and golfer.

The Minister of Health of Newfoundland, who had been a classmate of Dr. Murphy, said of him:

"He came back to Newfoundland to begin the practice of surgery at a time that made him a link between two medical epochs in Newfoundland. The First World War had killed off a whole generation of the flower of Newfoundland's young manhood, and the older men were being succeeded not by their sons but by their grandsons. There was this gap in age between the men who had established modern surgical methods in Newfoundland and those who were to carry on and sustain their great traditions. Dr. J. B. Murphy was one of those who succeeded in filling this most creditably.

"He was a great Newfoundlander. He epitomized all that is best in our national life. He had high intelligence without pretentiousness. He worked hard and he played hard. He had a rare gift for friendship. He devoted all his working life and all his great talents to the betterment of professional standards in his home town. He will be missed by a host of people and remembered kindly in many an isolated nook of the Island as long as gratitude and remembrance remain a trait of Newfoundland character."

Dr. Murphy is survived by his wife, the former Alice Harris; a son Dennis; and three daughters: Mrs. E. Sharpe of Grand Falls, Brenda, a teacher in St. Johns, and Elizabeth, who is at school in Montreal.

Nigel Rusted, M.D., F.I.C.S.

St. John's, Newfoundland

FOUNDED BY DR. MAX THOREK

The Journal of the International College of Surgeons

FOUNDED IN GENEVA, SWITZERLAND, 1935 - INCORPORATED IN WASHINGTON, D. C., 1940

Vol. 31 FEBRUARY, 1959 No. 2

General Surgery

Transcutaneous Hepatic Cholangiographic Study: Its Importance in the Diagnosis and Management of Biliary Disease

EARL J. HALLIGAN, M.D., F.A.C.S., F.I.C.S.*
AND RAHIM FARID, M.D.**
JERSEY CITY, NEW JERSEY

The literature on transhepatic cholangiography is reviewed.

With a background of more than 3,000 liver biopsies without complications, the authors are convinced that the procedure should be [illegible] in all cases of obstructive jaundice in which a differential diagnosis [illegible]

THE differential diagnosis of jaundice is at times so difficult that it taxes all one's ingenuity and one's resources. Frequently, even after the differentiation between medical and surgical jaundice has been made, the site and nature of the obstruction in cases of extrahepatic jaundice is still in doubt. With the jaundiced patient who has previously undergone cholecystectomy for stones, the question always arises whether the present icterus is due to stones, stricture or malignant disease. This problem has arisen many times, and the usual clinical, biochemical, roentgenographic and other technics are noninformative. It is true that intravenous cholangiographic study has been helpful, but in those with a serum bilirubin level above 3 to 5 mg. per hundred cubic centimeters this test is of minimal value. The usual biochemical studies may be misleading, particularly if infection has supervened and involved the smaller ducts.

In reviewing our research work we considered carefully biopsies of the liver, catheterization of the hepatic vein with wedge pressure readings, and oxygen and metabolite exchange. The concentration of the antibiotics in the liver and bile ducts was noted, and hepatophlebographic studies were performed. Values for transaminase and for blood ammonia were determined; tests for meat intoxication were included, as were observation of electrolyte patterns, splenoportographic studies, determination of splenic pulp pressure, the use of isotopes and transcutaneous cholangiographic investigation.

After careful consideration of these research programs it was our opinion that transcutaneous cholangiographic study,

TABLE 1.—*Correlation of Roentgen Observations with History and with Laboratory, Operative and Postmortem Data*

Clinic Diagnosis	*Duration of Jaundice*	*Serum Total*	*Bilirubin Direct*	*Alkaline Phosphatase*	*Roentgen Data*	*Operative Data*	*No. of Cases*
Congenital biliary atresia	2 years	30	—	11.4	Unable to puncture any duct	Complete biliary atresia	1
Hepatic jaundice	4 weeks	3.4	1.8	4.2	Unable to puncture any duct	No operation	1
Recurrent jaundice	25 weeks	4.8	3.6	11.7	Stricture of common duct	Stricture of common duct	1
Hepatic jaundice	20 weeks	15.0	12.3	10.0	Stricture of common duct	Sclerosing cholangeitis	1
Common duct stone	3 weeks	6.3	3.8	8.6	Common duct stone	Common duct stone	1
Carcinoma of head of pancreas	2 weeks	14.6	12.8	9.8	Obstruction of lower common duct	Carcinoma of common duct	1
Common duct stone	6 weeks	10.2	6.8	16.5	Complete obstruction of hepatic duct	Metastatic carcinoma of liver*	1
Metastatic carcinoma of liver	4 weeks	22.6	16.4	25	Complete obstruction of hepatic duct	Periductal metastasis*	1
Choledocholithiasis	4 weeks	14.2	14	7.4	Carcinoma of common duct	Periductal metastasis	1
Choledocholithiasis	3 weeks	31.0	17.0	12.1	Carcinoma of head of pancreas	Metastatic carcinoma of hepatic pedicle	1
						Total	10

*Postmortem observation.

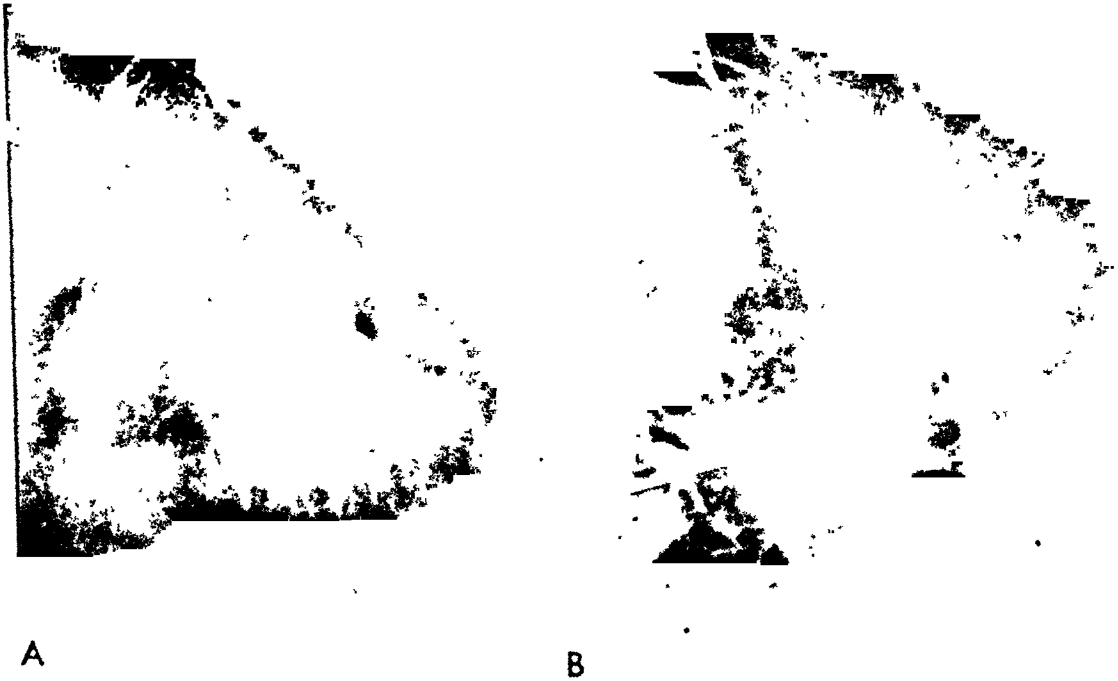

Fig. 1.—Comparison of biliary radicals of right and left hepatic ducts. *A*, postmortem injection of left hepatic duct. *B*, postmortem demonstration of right and left hepatic ducts.

hepatophlebographic examination for space-occupying lesions and the use of isotopes for detecting metastases or a primary growth in the liver would be valuable. This article is a preliminary report on the transcutaneous cholangiogram, which we have evaluated as to its safety, its complications, and its value as a method of decompression in the jaundiced. We have studied it also as a means of obtaining bile cultures and chemical studies of this fluid, determining the concentration of the antibiotics in the bile and adminis-

of the liver with the patient in the supine position under general anesthesia. This method never became popular, because of fear of biliary leakage[4] and the technical

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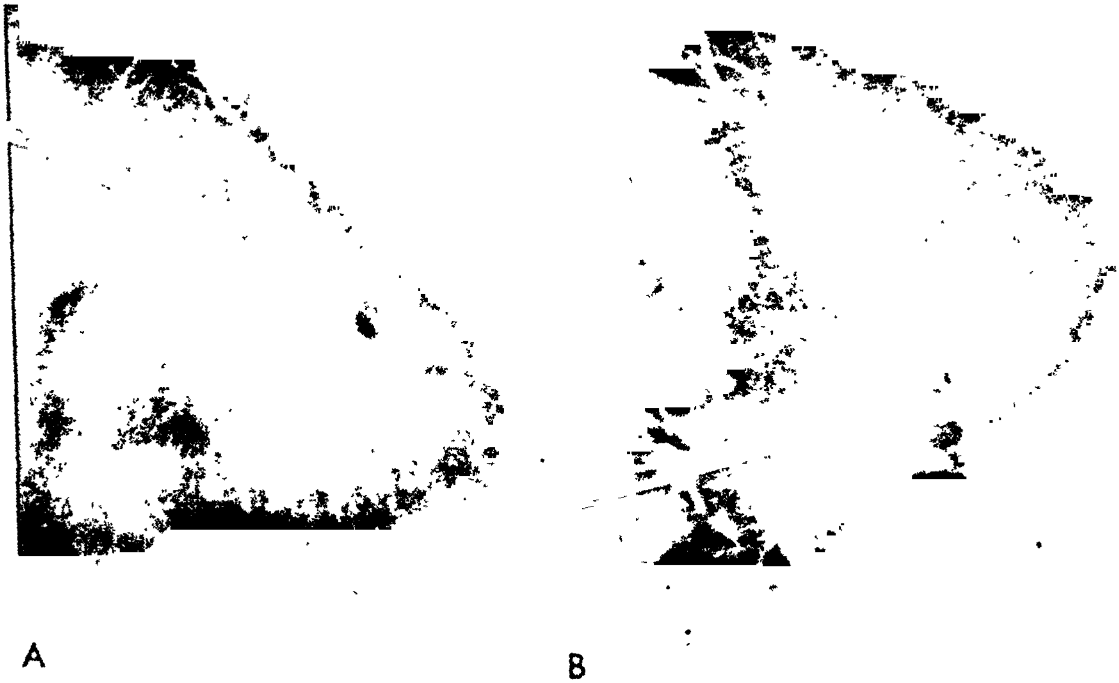

Fig. 1 —Comparison of biliary radicals of right and left hepatic ducts. *A*, postmortem injection of left hepatic duct. *B*, postmortem demonstration of right and left hepatic ducts.

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TABLE 2.—*Percentage of Successful Attempts to Puncture Biliary Tract in Cases of Obstructive and Nonobstructive Biliary Disease*

Cause	*No. of Cases*	*Result of Procedure*	*Total Percentage*
Biliary atresia	1	Failed to puncture any duct	10
Hepatitis with jaundice	1	Failed to puncture any duct	10
Extrahepatic obstructive jaundice	8	Successful puncture of biliary tract	100
Totals	10	Over-all percentage of success in jaundiced patients	80

difficulty in finding a small duct in the absence of any definite anatomic landmarks as guides. One fatality was reported as due to biliary leakage.

At the Medical Center more than 3,000 liver biopsy specimens were obtained without complications except in 1 case. Bleeding occurred in a case of cavernous hemangioma of the liver, in which operation had to be performed as an emergency. There has been no instance of biliary leakage, and with this background we considered the danger of leakage minimal.

At present we have adopted a different site and a different technic and changed the patient's posture, which, in our opinion, has improved the results obtained.

Postmortem studies in our cases of obstructive jaundice revealed a greater number of available biliary branches in the right lobe than in the left (Fig. 1). This is true also of the normal liver; consequently, the right lobe is selected for this procedure. It is technically difficult to insert the needle with the patient in the supine position and point it upward, backward and toward the right, and puncturing the left lobe of the liver offers a greater opportunity of penetrating the pericardium or the pleural cavity. This happened to us early in our work, and dye was injected into the pericardium. In order to prevent complications, the position was then changed to that suggested by one of us (R. F.), which is now known at the hospital as the Farid position. Puncture of the right lobe through an intercostal space is inefficient, because with this method one would puncture only the smaller peripheral ducts, which are not so markedly dilated. The subcostal approach of Kidd,[5] that is, at a point just below the costal margin at the juncture of the outer and middle third of a line joining the midline to the lateral border of the abdominal wall, with the needle inserted at an angle of 45 degrees to the horizontal plane and 15 degrees to the inner side of the vertical plane, was also discarded because of the possibility of perforating the gallbladder or injuring of the larger hepatic vessels. Our aim was to puncture either of the hepatic ducts or large radicals as near to the ducts in the hilum as possible, transversing the minimal amount of tissue.

We submit this procedure as an aid in the differential diagnosis of jaundice and also as a method of localizing the site and the agent causing obstruction at this point. This procedure has been usually unsuccessful in cases of the nonobstructive type.

Material.—Since February 1957, we have performed this test 23 times on 20 patients. Ten of these were jaundiced and 10 were not. Of the nonjaundiced patients, the only one in whose case we succeeded in puncturing any duct was one with a history of obstructive jaundice and common duct exploration revealing dilated bile ducts without obstruction. Three of the 10 jaundiced patients were reexamined,

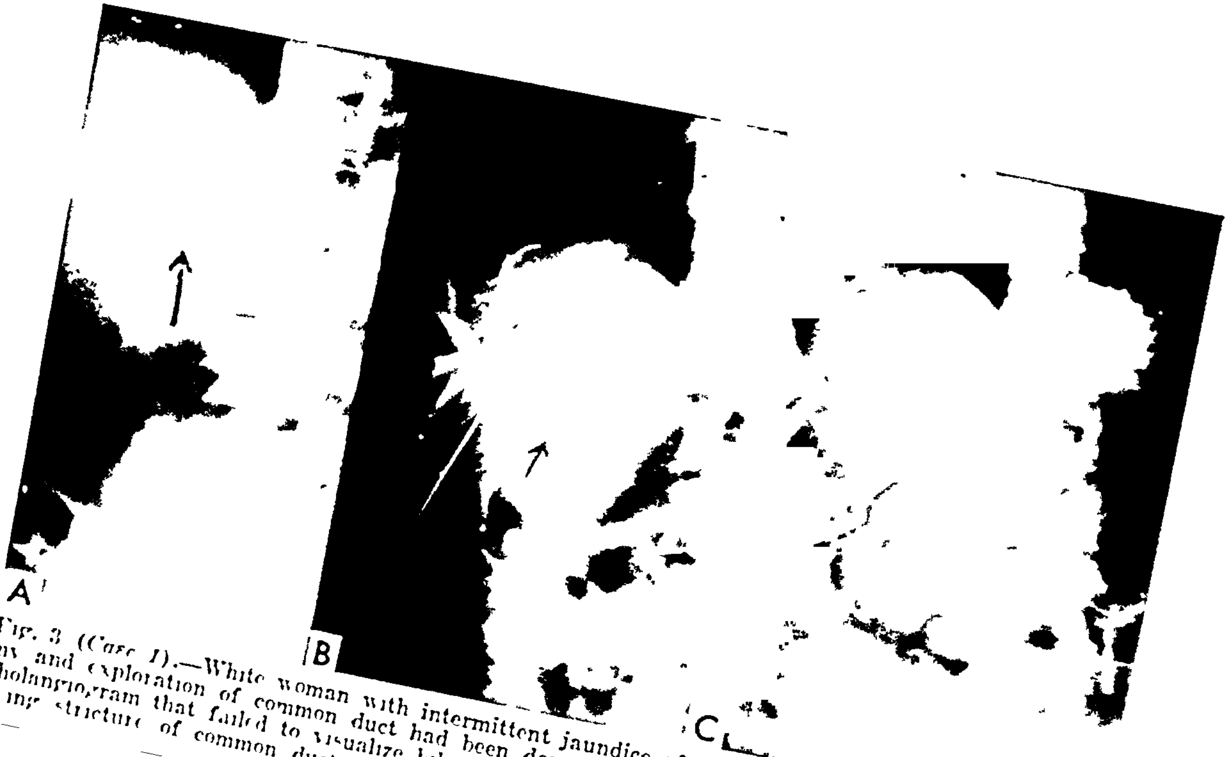
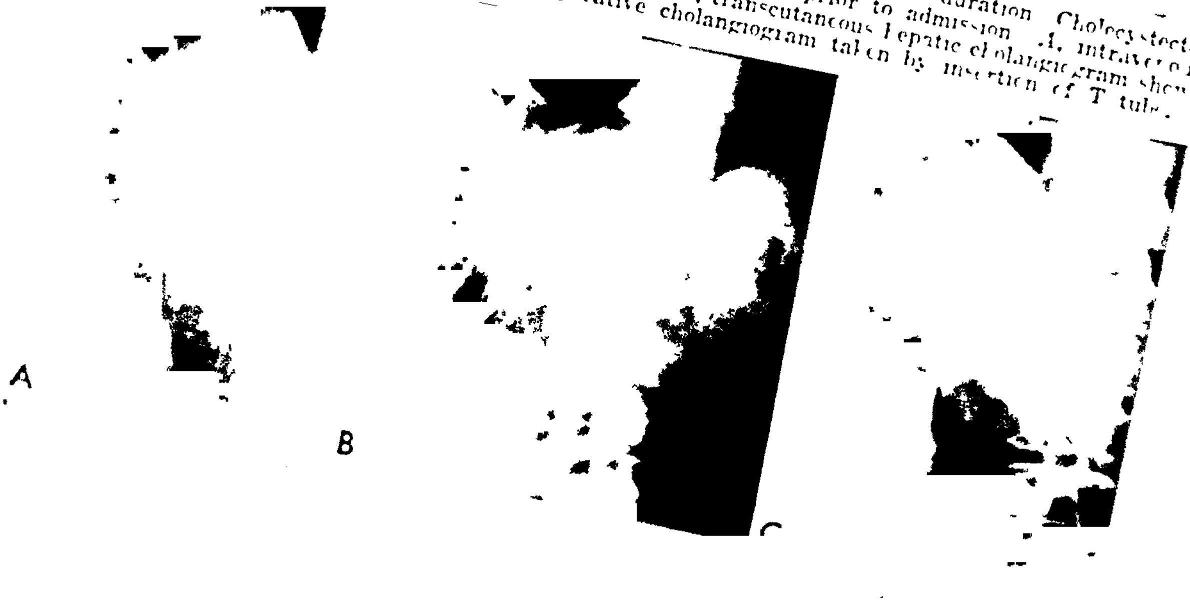


Fig. 3 (*Case 1*).—White woman with intermittent jaundice of six months' duration. Cholecystectomy and exploration of common duct had been done one year prior to admission. *A*, intravenous cholangiogram that failed to visualize biliary tract; *B*, transcutaneous hepatic cholangiogram showing stricture of common duct; *C*, postoperative cholangiogram taken by insertion of T tube.



Landmark.—A point located 3 cm. below the xiphoid process and 3 cm. to the right of the midline is the landmark of this procedure. In this approach, with the patient in the right oblique position, the needle should be directed almost at a 60-degree angle to the horizontal plane and 20 to 30 degrees upward (Fig. 2). This is the only approach feasible with the Farid position.

Technic.—A 17-gauge or 18-gauge needle (6 inches long) is introduced in an appropriate 60-degree angle to the table and 20 to 35 degrees upward. Negative pressure is applied as the needle advances, until bile or a white mucoid material is aspirated. The measurement of pressure is inaccurate when white bile is present. Blood vessels may be punctured; this, however, may be overcome just by withdrawing or advancing the needle. If blood is aspirated the needle should be irrigated with saline solution. When the needle has entered a biliary radical and the contents of the duct have been fully aspirated, 15 to 18 cc. of a contrast medium (diodrast) is injected, and roentgenograms in different positions are taken. Fluoroscopic control will be of great value if technically feasible. The patient should be advised to take shallow breaths during the procedure. Before withdrawal of the needle, the ductal contents should be completely aspirated. To avoid complications, we prefer to enter the liver parenchyma as soon as the peritoneal cavity is entered.

Complications. — Biliary peritonitis is the important expected and reported complication of this procedure. We were so fortunate as not to encounter any serious mishaps. Slight interscapular pain and pain in the right shoulder lasting one to two hours was noted in all of our patients. In 1 case nausea and vomiting occurred. In our first attempt the pericardium was punctured without any disturbing effects. A roentgen follow-up revealed disappearance of the dye within forty-eight hours.

Our operative and postmortem studies showed that there was no sign of leakage or hemorrhage in any of our cases.

ZUSAMMENFASSUNG

Die Verfasser geben einen Überblick über die Literatur über transhepatische Cholangiographie. Sie glauben, dass dieses Verfahren aus Angst vor Durchsickern von Galle und vor Blutungen vernachlässigt worden ist.

Gestützt auf Erfahrungen mit mehr als 3000 Probeexzisionen der Leber ohne Komplikationen halten sie das Verfahren für gerechtfertigt. Die Anwendung der "Farid-Lagerung" des Patienten, die Auswahl des rechten statt des linken Leberlappens unter Berücksichtigung bestimmter anatomischer Merkpunkte und Direktiven bei Einführung der Nadel werden zu verbesserten Ergebnissen der Methode führen. Die Verfasser sind überzeugt, dass das Verfahren routinemässig in allen Fällen von obstruktiver Gelbsucht, wo differentialdiagnostische Schwierigkeiten bestehen oder Sitz oder Art der Erkrankung sich nicht bestimmen lassen, angewendet werden sollte. Acht Fälle von obstruktiver Gelbsucht werden einschliesslich der Operations- und Obduktionsergebnisse erörtert.

Das Gallengangsystem wurde in 80 Prozent der Kranken der Verfasser erfolgreich dargestellt.

RIASSUNTO

Viene fatta una rassegna della letteratura sulla colangiografia transepatica. Questo mezzo di indagine è stato trascutato, secondo l'autore, per il timore della fistola biliare e dell'emorragia.

Un'esperienza fatta su oltre 3000 biopsie epatiche senza complicazioni fa ritenere questo procedimento accettabile. La posizione di Farid e la scelta del lobo destro piuttosto che di quello sinistro, avendo dei

punti di repere sicuri per l'infissione dell'ago, consente di avere dei risultati buoni. Gli autori sono persuasi che il metodo debba entrare nella pratica corrente in ogni caso di ittero ostruttivo in cui non si possa fare la diagnosi differenziale o non si possa stabilire la sede e il tipo della lesione.

Vengono discussi 8 casi di ittero ostruttivo controllati operatoriamente o autopticamente. Nell'80% dei casi studiati si sono avute belle immagini delle vie biliari.

RESUMEN

Se hace una revisión de la literatura sobre colangiografía transhepática. Parece ser que esta técnica ha sido algo dejada de lado por el temor de hemorragia o colerragia.

Los autores consideran el método justificable después de haber realizado más de 3.000 biopsias del higado. Se obtienen los mejores resultados poniendo al enfermo en posición de Farid, practicando la punción en el lóbulo derecho, en vez de en el izquierdo y utilizando puntos anatómicos fijos para la introducción de la aguja.

Creen los autores que debe ser esta biopsia un método rutinario en todos los casos en que se precise el diagnóstico exacto de la naturaleza de una ictericia obstructiva. Se presentan ocho casos de obstrucción biliar con estudio del higado durante la operacion y post-mortem.

El árbol biliar ha sido demostrado satisfactoriamente en el 80% de los enfermos de los autores.

querdo. ajudam a melhorar os resultados nesse método. Estão convencidos de que essa operação deve ser rotina em todos os casos de ictericia obstrutiva em que o diagnostico diferencial e de localização não puderam ser feitos. Discutem oito casos de ictericia obstrutiva com revisão do pre e pósoperatorio. Em 80% dos casos dos AA. tem sido feita a demons tração do sistema biliar.

RÉSUMÉ

Une revue de la littérature sur la cholangiographie transhépatique est présentée. Les auteurs estiment que cette technique a été négligée par crainte d'un suintement et d'une hémorragie biliaire.

Avec une expérience de 3.000 biopsies hépatiques, ils considèrent cette méthode comme justifiée. La "position Farid" et la sélection du lobe hépatique droit plutôt que gauche, des points de repère anatomiques précis et une bonne technique d'insertion de l'aiguille, tendront à améliorer les résultats. Les auteurs expriment la conviction que cette méthode mérite d'être adoptée comme méthode de routine dans tous les cas d'ictère par obstruction dans lesquels le diagnostic différentiel est impossible, ou lorsque le siège ou le type de la lésion ne peuvent être déterminés. Huit cas d'ictère par obstruction avec examens opératoires et post mortem du foie sont discutés.

Les voies biliaires ont été mises en évidence avec succès dans 80% des cas des auteurs.

Treatment for Perforated Peptic Ulcer

CARL A. GHERARDI, M.D.*
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AND
FRANCESCO BALDRATI, M.D.**
BOLOGNA, ITALY

UP TO 1870, when Redwood[1] presented a case of perforated peptic ulcer successfully treated by conservative therapy, surgical intervention was the only accepted means of treatment for this condition.

This concept, however, was confined to the theoretical field, since only in 1935 were the methods and technic of such treatment presented and stressed by Wangensteen[2] in his publication: *Non-Operative Treatment of Localized Perforations of the Duodenum.* From then on, more or less conservative surgeons directed their attention and efforts to improvement of this new method of therapy for a lesion that had previously been considered a critical surgical emergency.[3]

In their research, the timely aid of the progress made in the chemotherapy, fluid-electrolyte balance and antibiotics found a prominent place, so that some surgeons became more inclined toward the institution of a conservative method in both selected and nonselected cases. They based their assertions on the fact that a perforation of the stomach or duodenum will close itself if the stomach is kept empty so that nothing passes through the opening. Furthermore, it was noted, as a rule, that even early operation reveals sealed-off perforations that must be torn down in order to accomplish surgical closure of the lesion, and that the mortality and morbidity rate of the operative approach is sensibly higher than that of nonoperative treatment. On these premises is based the conservative management, to be discussed here. It is considered the treatment of choice and is routinely carried out in certain clinics.[4]

The series of cases here presented consists of a total of 181 patients with perforated peptic ulcer, observed during the past ten years. The majority of these patients (175, or 96.6 per cent), were treated surgically; the remainder were treated by conservative therapy consisting of suction, parenteral infusions and antibiotics.

The details of these two different types of management will be presented later.

Diagnosis.—The diagnosis of perforated peptic ulcer was made preoperatively, except in 1 instance, on the basis of subjective and objective signs and symptoms. Roentgenographic examination was always performed, and in all but 25 per cent of the cases pneumoperitoneum was present. In only 1 case, as has been mentioned, a preoperative diagnosis of acute appendicitis with rupture was made. During the operation a gangrenous perforated appendix was observed, together with a perforated peptic ulcer, which had not been detected in preoperative study of the patient.

Site of Perforation. — The duodenum was found to be the most common location of the perforation (86.8 per cent), followed by the stomach (12 per cent). There were also 2 cases of perforated marginal

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ulcer (1.1 per cent). In these 2 instances simple closure of the perforation was carried out.[5]

Age and Sex.—The female sex was represented in this series by 13 cases (6.8 per cent) only. This striking difference in sex selectivity repeats the reports in all other published statistics (Seeley;[31] Seeley and Campbell[32]). Perforation was mostly observed in the age group between 40 and 49 years of age, followed by those 30 to 39 and 50 to 59.

The youngest and oldest patients were respectively 14 and 84 years of age. The age group distribution of these 181 patients is shown in Table 1.

Interval Between Perforation and Institution of Treatment. — The periods of time, expressed in hours, that elapsed between perforation and the institution of the surgical treatment are listed in Table 2.

The highest mortality rate was observed among patients belonging to the time-group over forty-eight hours, followed by twenty-five to thirty-six hours, thirty-seven to forty-eight hours and thirteen to eighteen hours respectively. The patients who were operated upon at least forty-eight hours after the perforation occurred were all in shock at the time of admission.

TABLE 1.—Age Distribution

Age, Yr.	No. of Cases	No. of Deaths	Mortality Per Cent
14	1	0	0
[illegible]	2	0	0
[illegible]	21	1	[illegible]
[illegible]	[illegible]	5	12.5
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	7	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

The authors have treated perforated peptic ulcer in 181 cases by simple closure of the perforation and express the opinion that this should still be considered the treatment of choice. Surgical therapy should be undertaken only after thorough preparation of the patient, and the immediate postoperative period should be planned with the same care and thoroughness.

In the presence of large perforations, suspected neoplastic ulcers, bleeding ulcers or pyloric stenosis, and during the first twelve hours after perforation has occurred, subtotal gastrectomy may be indicated and performed. The rules as to preparation of the patient and evaluation of his condition are also in this instance to be observed and applied. Conservative treatment should be considered only when adequate equipment and constant, vigilant follow-up of the patient are available and in those cases in which the history and the physical signs unmistakably indicate a sealing-off perforation.

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gency subtotal gastrectomy, indicated by either bleeding ulcer or pyloric stenosis. On all these patients, subtotal gastrectomy with antecolic gastrojejunostomy oralis inferior, isoperistaltic, was performed. The retrocolic approach was used only in a few instances, and no substantial difference was noticed between these two methods as to function and the postoperative period.

The mortality rate of this part of the series is represented by only 1 patient, who was operated upon sixteen hours after perforation had occurred. In view of this, one can theorize that, an indication being present, a subtotal gastrectomy can be considered during the first twelve-hour period, provided that time and opportunity for a good preparation of the patient are available.[9]

During the same period, 6 patients with perforated peptic ulcer were treated conservatively with continuous gastric suction, intravenous therapy and antibiotics. The indications for such treatment were, according to each single case, either the duration of the perforation, the advanced age of the patient, or the general condi-

TABLE 4.—*Results of Surgical Intervention*

Case	*Age of Patient*	*Sex of Patient*	*Hours Between Perforation and Treatment*	*Preoperative Preparation*	*Result*
1	22	M	6	Adequate	Good
2	25	M	6	Adequate	Good
3	29	M	2	Adequate	Good
4	31	M	12	Adequate	Good
5	37	M	5	Adequate	Good
6	42	M	4	Adequate	Good
7	43	M	4	Adequate	Good
8	47	M	4	Adequate	Good
9	47	M	6	Adequate	Good
10	51	M	5	Adequate	Good
11	51	M	5	Adequate	Good
12	52	M	4	Adequate	Good
13	56	F	16	Adequate	Good
14	57	M	8	Adequate	Good
15	63	M	4	Adequate	Good

TABLE 5.—[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

TABLE 2.—*Interval Between Perforation and Institution of Therapy*

Hours	*No. of Patients*	*No. of Deaths*	*Age at Death, Yr.*	*Mortality, %*	*No. of Patients Insufficiently Prepared*
1-3	7	0	—	—	0
4-5	24	1	61	4	0
6-8	62	1	75	1.6	0
9-12	42	5	24, 36, 41, 75, 75	11.8	28
13-18	17	4	46, 53, 56, 67	23.5	13
19-24	6	0	—	—	3
25-36	5	3	37, 62, 57	60	3
37-48	4	1	61	25	1
over 48	8	5	39, 49, 50, 54, 69	62.5	5
Totals	175	20		11.4	53

The 3 deaths in the group represented by twenty-five to thirty-six hours, were all those of patients insufficiently prepared, 2 of whom were in shock at the time of hospitalization. The same can be said for the mortality rate in the time group thirty-seven to forty-eight hours.

In the time groups thirteen to eighteen hours and nine to twelve hours, 41 of the 59 patients treated underwent operation insufficiently prepared. Of these, however, in contrast with the preceding data, only 9 did not survive. It is our conclusion that the lower mortality rate here observed is directly related to the earlier age, better general condition and better recuperative capacity possessed by these patients.

In view of these facts, we consider the mortality rate directly related to the period of time that elapses between perforation and hospitalization, as well as to the institution of an adequate preoperative preparation, consisting in the administration of a sufficient amount of fluids and aspiration of the gastric cavity.

The over-all mortality rate among the 175 surgically treated patients was 11.4 per cent. This percentage of failure is fairly high if one considers the preceding reported statistics and particularly the fact that our series concerns cases observed during the past ten years, i.e., during a period in which the contributions and assistance of fluids, electrolytes and antibiotic therapy were readily at hand.

In our opinion, such a high rate of failure can be much improved and lowered to 1.4 per cent (as reported in the statistics of Baritell,[6] Vaughan and Warren,[7] Beahrs,[8] and Lassen, Table 3), if thorough and careful preparation and postoperative management of the patient are be sought and secured.

Of the 175 patients who underwent operations, 15 were subjected to emer-

TABLE 3.—*Mortality in Operative Cases*

Author	*Years*	*No. of Cases*	*Mortality, %*
Luer[3c]	1938-1948	318	18.2
Kingsbury[3b]	1944-1949	169	9.5
Beahrs[8]	1941-1951	114	2.6
Schmitz	1948-1952	103	5.8
Baritell[6]	1947	88	1.1
Vaughan and Warren[7]	1944-1949	70	1.4
Lassen	1947-1951	60	6.7
Totals		1,026	6.7

Spontaneous Complication of Cholelithiasis by Gluteal Abscess

PASCUAL MAGALDI, M.D., F.I.C.S.

BUENOS AIRES, ARGENTINA

The author reports the case of an Italian woman aged 69, presenting illustrations and comment. In this case gluteal abscess developed as a spontaneous complication of cholelithiasis. Few such cases have been reported in the literature. Because of this, and because surgical treatment resulted in excellent results, the author considers the case deserving of attention.

THE strange course followed by untreated cholelithiasis presents a complication that is not only uncommon but extremely rare, owing to the fact that there are no surgical antecedents during clinical observation and because of the distant site of evacuation of the abscess.

Consulting reports of both Argentine and foreign cases, I was unable to find another similar to the one to be reported, and this has led me to its publication, not only because of its peculiarity but because of the brilliant surgical treatment.

REPORT OF CASE

En présence de perforations importantes, suspection d'ulcères néoplasiques, ulcères hémorragiques ou sténose pylorique, ou durant les 12 premières heures après la perforation, une gastrectomie subtotale peut être indiquée et pratiquée. Là aussi il faut observer et appliquer les règles relatives à la préparation du malade et à l'évaluation de son état. Le traitement conservateur ne devrait être envisagé que lorsqu'on dispose d'un équipement approprié, avec la possibilité de pouvoir suivre le malade de façon attentive et constante, et seulement dans les cas où l'anamnèse et les signes cliniques ne laissent aucun doute quant à l'imminence d'une perforation.

Les auteurs estiment qu'un traitement chirurgical complet, plus qu'aucune autre méthode, diminue la période de maladie et abaisse le taux des complications.

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Pharmacology more than any other branch of medicine seems to have fascinated the Arabs. Century after century there was not a single medical writer who did not devote some of his writings to science, thus incessantly increasing the list of medicaments which already swelled Arabic pharmacy. Arabic pharmacology spread through Persia in the tenth century in the form of works written in Neo-Persian. In one of these books written by Abu Masur Muwaffaq, five-hundred and forty-nine medicaments and their effects are mentioned, and in the *Hami* (thirteenth century) fourteen hundred drugs are studied.

—*Marti-Ibañez*

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REPORT OF CASE

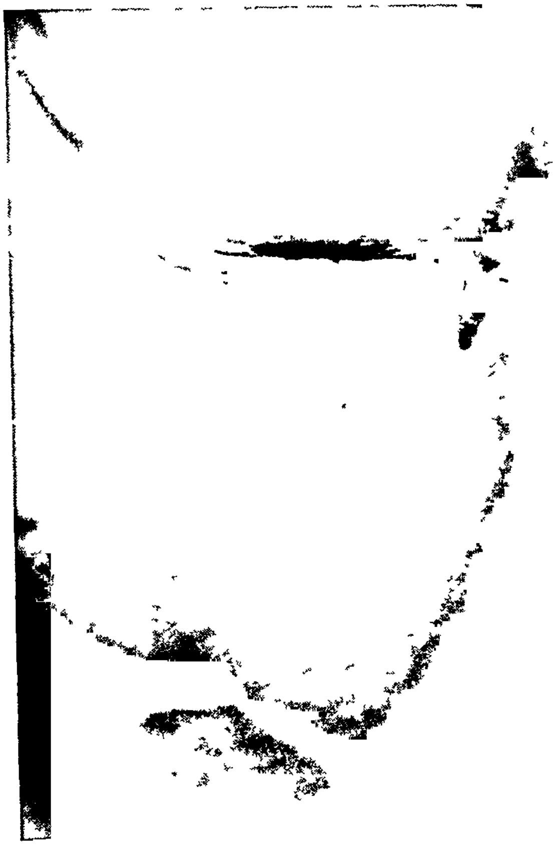

Fig. 1 (see text).

cavity were continued; routine analyses were made, and the patient was prepared for definite surgical intervention. A cholecystectomy was carried out with the patient under general anesthesia induced with pentothal-curare and pantocaine 2 per cent injected intravenously.

The surgical team consisted of: the operating surgeon (Dr. Magaldi); assistants, Drs. Naselli and Scillone, and anesthetist, Dr. Costa.

The peritoneum was opened by a subcostal incision, and the parietovisceral adhesions were freed. The gallbladder was isolated and was noted to be intact except for a fistula near the neck, adhering to the posterior parietal planes, the fistulous tract continuing in the middle segment of the wall of the flank corresponding to the Grynfeld space. There the dissection was finished, with closure of the fistulated parietal peritoneum.

The cholecystectomy having been performed (see photograph) an operative cholangiogram was taken, revealing a normal biliary tract.

A rubber drain was placed in the foramen of Winslow, and the abdomen was closed in layers with wire and clips. During the operation a curettage of the abscess cavity was effected, since fungoid material was observed in the wall of the cavity, and 10 cc. of cibazol was injected.

The postoperative course was normal.

COMMENT

The evolution of the pathologic process in this case may be summarized as follows:

June 3: Patient admitted to hospital and abscess drained.

June 16: Cholecystectomy performed.

June 25: Patient discharged, cured.

July 3: Patient started working at home, with no complaints.

On consulting the Argentine and foreign literature, I encountered the following publications. In Argentina Ronconi, a surgeon of Rosario, reported the first case, which was published in the Bulletin of the Rosario Society of Surgeons, 2:4, Feb. 4, 1935, under the title "Spontaneous External Biliary Fistula." The second case was reported by Drs. Michans and Mugaburu and published in the Bulletin of the Argentine Society of Surgeons (2:708, 1941), under the title "Cholecystoumbilical Fistula." To date I have not found any other case reported from Argentina.

In the foreign literature, Thilesus reported the first case in 1670. Later, in 1890, Courvoisier published a complete summary of known cases, with a count of 169 external biliary fistulas; and the latest publication was that by Henri and Orr (Surgery 26:4, 1941), in which 37 additional cases were well studied and registered.

From a study of the aforementioned publications, the complication appears to be much more infrequent in our day, ow-

Fig. 2 (see text).

gluteal location. In no literature consulted have I found a report of a case in which a giant abscess has failed to fistulize; in which it perforated the neck of the gallbladder instead of the fundus, the usual site of perforation, and in which it was finally cured after cholecystectomy.

The peculiar and distant evolution of this complication which caused it to evacuate through the weakened abdominal wall (in my case the Grynfeld space), the formation of a large gluteal subcutaneous abscess, and the absence of clinical demonstrations in the exploration of the upper part of the abdomen all go to show that this was indeed an extremely exceptional case.

RÉSUMÉ

L'auteur rapporte le cas d'une Italienne de 68 ans, qu'il accompagne d'illustrations et de commentaire. Dans ce cas l'abcès de la fesse s'est développé en tant que complication spontanée d'une cholélithiase. La littérature contient peu de cas semblables. C'est pourquoi, et aussi parce ce que l'opération a donné d'excellents résultats, l'auteur estime que ce cas mérite de retenir l'attention.

ZUSAMMENFASSUNG

Der Verfasser berichtet unter Hinzufügung von Abbildungen und Bemerkungen über den Fall einer 68jährigen Italienerin, bei der sich als spontane Komplikation einer Cholelithiasis ein Glutäalabszess entwickelte. Nur wenige derartige Fälle sind veröffentlicht worden. Aus diesem Grunde und wegen des ausgezeichneten Erfolges chirurgischer Behandlung hält der Verfasser es für gerechtfertigt, den Fall vorzustellen.

SUMARIO

Relata o caso de uma mulher de 68 anos no qual um abcesso glueteo se formou como complicaçao espontanea de uma colelitiase. Este fato e o tratamento cirurgico com resultado excelente yorna o caso, na opinião do A, digno de atenção.

RIASSUNTO

L'autore riporta il caso di una donna di 68 anni in cui si produsse un ascesso gluteo come complicazione spontanea di una colelitiasi. Di casi simili ne esistono pochi altri in letteratura e sono degni di essere ricordati; il risultato della cura chirurgica fu eccellente.

RESUMEN

El autor hace referencia a una enferma italiana de 68 años en la que se produjo expontaneamente un absceso glúteo en el curso de una colecistitis. En la literatura se citan pocos casos parecidos. Por esto y porque el tratamiento quirúrgico produjo la curación es por lo que el autor cree el caso digno de atención.

* * *

> It is the common wonder of all men, how among so many millions of faces there are no two alike.
>
> —*Sir Thomas Browne* (Religio Medici)

Thrombophlebitis of the Superficial and Deep Veins Treated with Phenylbutazone (Butazolidin)

EGMONT J. ORBACH, M.D., F.I.C.S.
NEW BRITAIN, CONNECTICUT

THE treatment of thrombophlebitis has been profoundly influenced by the introduction of anticoagulant therapy, which greatly reduces the danger of embolism in thrombophlebitis associated with surgery, pregnancy, and trauma. More recently it has been reported that *perivascular inflammation* associated with acute superficial thrombophlebitis could be rapidly resolved by the use of an anti-inflammatory agent, phenylbutazone.[*]

The author evaluates the results of short-term therapy with phenylbutazone in the treatment of 22 patients with acute thrombophlebitis affecting superficial and or deep veins of the extremities. Signs of acute inflammation subsided rapidly and completely in almost every case, and it proved unnecessary to administer phenylbutazone for longer than one week

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The author evaluates the results of short-term therapy with phenylbutazone in the treatment of 22 patients with acute thrombophlebitis affecting superficial and or deep veins of the extremities. Signs of acute inflammation subsided rapidly and completely in almost every case, and it proved unnecessary to administer phenylbutazone for longer than one week to any of the patients treated. Phlebitis recurred in 2 patients; a second course of phenylbutazone was suc-

THE treatment of thrombophlebitis has been profoundly influenced by the introduction of anticoagulant therapy, which greatly reduces the danger of embolism in thrombophlebitis associated with surgery, pregnancy, and trauma. More recently it has been reported that perivascular inflammation associated with acute superficial thrombophlebitis could be rapidly resolved by the use of an anti-inflammatory agent, phenylbutazone.[5]

Since the appearance of the initial reports by Sigg[1] in Switzerland and Stein and by Rose[2] in the United States, several other studies have confirmed the impresolution of the inflammatory process without recurrence. During administration of phenylbutazone under these conditions, no significant toxic effects of the drug have been observed.[4]

Although the published studies mentioned above have dealt principally with disorders of the superficial veins of the extremities, cases of deep-vein phlebitis have also been successfully treated with phenylbutazone.[4] The present study was initiated to determine the clinical usefulness of this agent, together with adjunctive measures including early ambulation and consistent use of compression bandages, in the treatment of thrombophlebitis affecting either superficial or deep veins.

Technic: Twenty-two patients with acute thrombophlebitis were selected for trial with phenylbutazone. In 12 of the patients the disorder affected only superficial veins of the leg or thigh; deep veins were affected in the other 10, with superficial veins also involved in 1 case. The patients ranged in age from 33 to 78 years, most of them being between 50 and 70. Although none had any history of previous embolism, several had had episodes of thrombophlebitis. Symptoms of the current disorder were of recent origin, and in most cases had been present for less than two weeks before phenylbutazone therapy was initiated. The phlebitis occurred postoperatively in 2 patients, after injection of sclerosing agents in 4, after mechanical trauma in 1 (diabetic) patient, and was of obscure origin or associated with varicosities in the rest.

Phenylbutazone was administered orally to 16 patients and intramuscularly to 6. The usual oral dose was 300 mg. daily, given in divided doses, for the first two or three days. When administration was continued beyond that time, the dose was frequently reduced to 200 mg. daily. In no case was it necessary to continue oral phenylbutazone therapy longer than a week, and the total amount administered to any patient did not exceed 2.1 Gm. Used intramuscularly, a single injection of 600 mg. of phenylbutazone was generally sufficient to accomplish a lasting result, since the drug is absorbed slowly from intramuscular depots. No analgesic agent other than phenylbutazone was given to these patients, and narcotics were not employed in any case.

In all cases, compression bandages were used to reduce the initial edema and to prevent further swelling, and early ambulation was encouraged. In several cases of superficial thrombophlebitis the vein was incised and the clotted or stagnated blood removed. Because patients in this study were to be given phenylbutazone for no longer than one week, hematologic studies were not considered essential and were not routinely performed.

Results of Therapy. — Superficial Thrombophlebitis: Therapy with phenylbutazone produced a satisfactory resolution of inflammatory activity in all of the patients treated. Pain and tenderness were relieved after one or two days of therapy, even in several patients with rather severe pain, and local heat was no longer apparent after two or three days. After a longer and variable interval, generally three days to one week, venous cords became less palpable and signs of periphlebitis disappeared completely.

Deep Thrombophlebitis: The patients in this group were relieved of symptoms and objective signs of inflammation after two to five days of phenylbutazone therapy. Extreme tenderness, present in most of them when first seen, usually disappeared completely within two or three days; edema was absent after four or five days; and Homans' sign, which was usually present at the beginning of treatment, could no longer be elicited after about a week, except in 1 patient, in whom it persisted for more than two weeks.

No toxic or other undesirable effects from phenylbutazone therapy were observed in any of the patients treated in this study.

Phlebitis recurred in 2 patients after being controlled initially with phenylbutazone. In 1 case the second episode was terminated as easily as the first. In the other case the recurrence was not treated again with phenylbutazone, since the patient was a diabetic woman with the Kimmelstiel-Wilson syndrome.

COMMENT

The precise mechanism by which phenylbutazone acts in resolving thrombophlebitis is not entirely clear. The drug has definite analgesic and antipyretic activity, which may account in part for the rapid subsidence of pain and systemic fever that occurred after its administration in this study. It promotes water retention, and the subsequent hemodilution may play a therapeutic role in the alleviation and prevention of propagation of thrombophlebitis. It is likely, however, that the most important effect of phenylbutazone on thrombophlebitis is its specific anti-inflammatory activity. Stein[7] has shown that the inflammation following experimentally induced venous thrombosis in the rabbit is inhibited by phenylbuta-

inflammatory activity might similarly abolish internuncial neuron activity by decreasing afferent impulses from the site of inflammation.

Although the doses of phenylbutazone used in this study proved adequate to achieve prompt subsidence of signs of phlebitis, other investigators have occasionally employed doses up to 600 mg. daily for short periods without untoward effects. Such doses may sometimes be required for optimal results when the condition is refractory or chronic.

RÉSUMÉ

Une thérapeutique de courte durée au phénylbutazone a été étudiée sur une série de 22 cas de thrombophlébite aiguë des veines superficielles ou profondes des extrémités.

Les symptômes d'inflammation aigue ont rapidement et complètement disparu dans presque tous les cas après un traitement n'excédant jamais une semaine.

Sur deux cas de récidive, un second traitement a amené la guérison dans un cas; le second cas n'a pas été traité.

L'absence de toxicité du phénylbutazone administré dans ces conditions en fait un auxiliaire précieux. D'autres recherches concernant son action sur ces troubles sont décrites.

Rückfall von Venenentzündung; bei einem von diesen erwies sich eine zweite Phenylbutazonbehandlung als erfolgreich, bei dem anderen wurde kein weiterer Behandlungsversuch unternommen.

Das Ausbleiben toxischer Wirkungen des Phenylbutazons lässt darauf schliessen, dass sich das Mittel mit grossem Nutzen in der Behandlung der Thrombophlebitis oberflächlicher oder tiefer Venen anwenden lässt. Weitere Untersuchungen über die Möglichkeiten in der Behandlung dieser Krankheitszustände sind am Platze.

RESUMEN

La terapia con fenil-butazona dió buenos resultados a corto plazo en 22 casos de tromboflebitis, ya de las venas superficiales va de las profundas o ya de ambas, en las extremidades.

Los signos de inflamación aguda cedieron pronto y por completo en casi todos los casos, y se comprobó lo inecesario de prolongar el tratamiento durante más de una semana.

Uno de los dos enfermos que recidivaron fué sometido de nuevo al mismo tratamiento lográndose la completa curación; en el otro no se intento.

La ausencia de efectos tóxicos de la fenilbutazona en estas situaciones, indica que este medicamento puede ser muy útil en el tratamiento de las tromboflebitis superficiales o profundas.

Se señalan además trabajos de investigación sobre la aplicación del medicamento en estas enfermedades.

RIASSUNTO

Gli effetti della terapia con fenilbutazone stati studiati in un gruppo di 22 malati con tromboflebite acuta delle vene superficiali o profonde degli arti inferiori.

I segni della flogosi scomparver immediatamente e completamente in quasi tutti i casi e non fu mai necessario prolungare il trattamento oltre i sette giorni. La flebite recidivò in 2 malati, uno dei quali fu di nuovo curato con successo col fenilbutazone.

L'assenza di manifestazioni tossiche da parte del farmaco, in queste condizioni, indica che esso può essere impiegato con la massima utilità nella cura delle tromboflebiti, e merita ulteriori controlli.

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Genitourinary Surgery

Urachal Adenocarcinoma of the Urinary Bladder

Report of Two Cases

ALLAN K. SWERSIE, M.D., F.A.C.S.,* CYRIL SOLOMON, M.D.,**
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Two cases of adenocarcinoma of the bladder, mucus-secreting type, urachal in origin, are added to the literature.

In 1 case a wide segmental resection of the bladder was done, with recurrence of the tumor and metastases to the omentum and mesentery. In the other case the condition was inoperable, in view of the extent and advancement of the lesions.

THE incidence of adenocarcinoma of the urinary bladder in relation to the total number of tumors of the bladder has been reported at 0.5 per cent.[1] In all, 72 cases of urachal adenocarcinoma of the urinary bladder have been reported.[2] Uncommon conditions, by some irrational mathematical law, group themselves in cycles. Within a few weeks we encountered 2 cases of adenocarcinoma of the bladder of the mucus-secreting type, of urachal origin.

The following classification of adenocarcinoma of the bladder, suggested by Wheeler, Hill and Ackerman, is generally accepted: (1) primary, occurring either in a normally placed or in an exstrophied

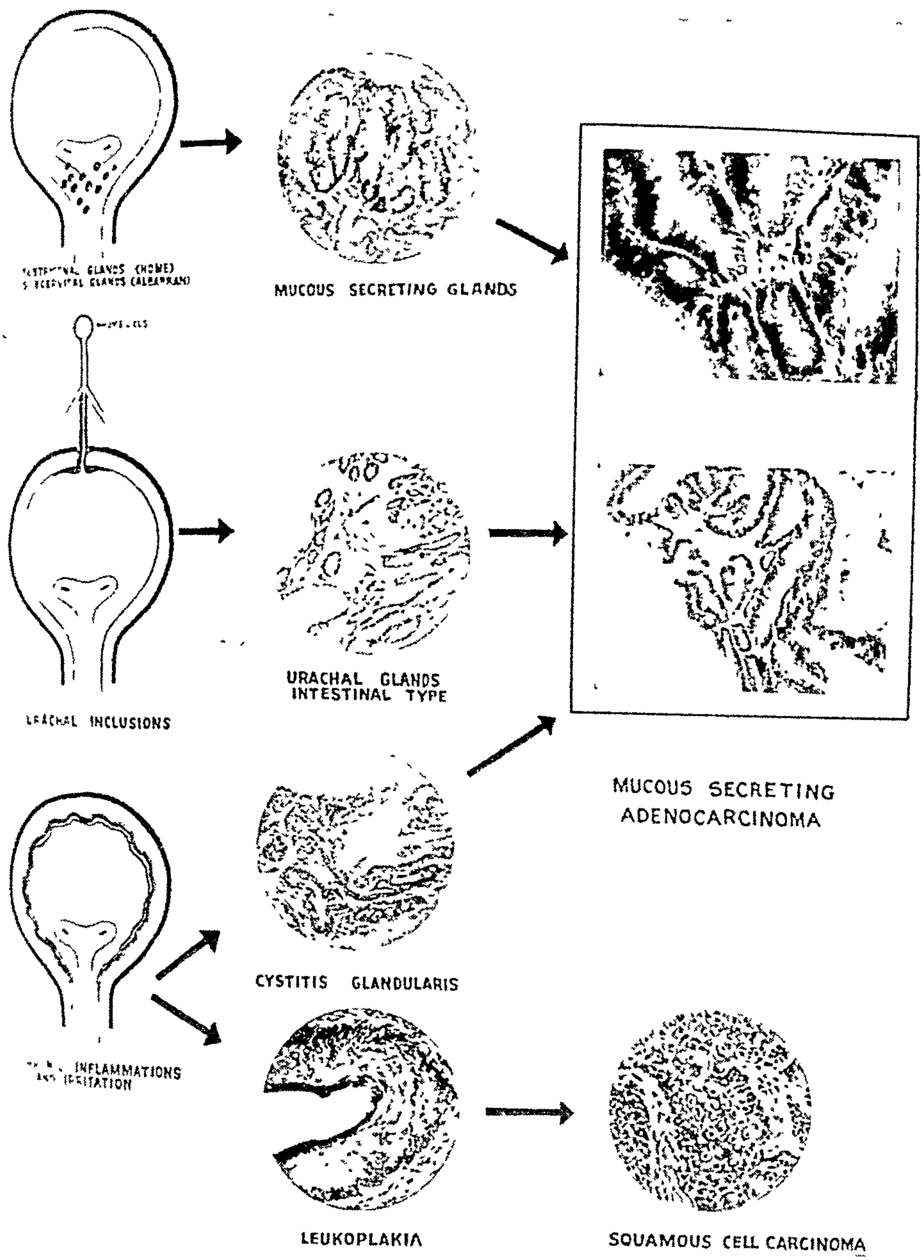


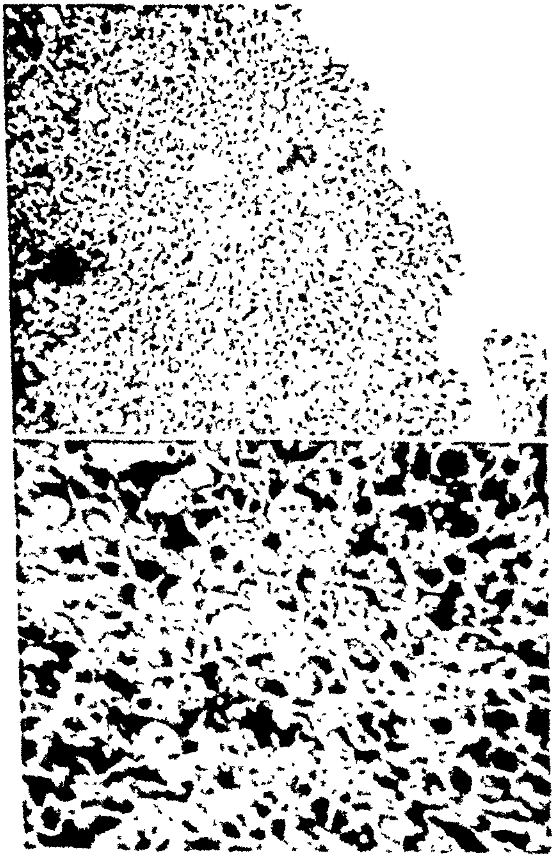
Fig. 1.—Pathogenesis of adenocarcinoma of the bladder. *(Courtesy of authors and publisher: Howard, A. H., and Bergman, R. T.,* J. Urol. 59*:455-460 [March] 1948).*

REPORT OF CASES

CASE 1.—A. R., a 42-year-old Negress, was admitted to the Urological Service on May 9, 1956, complaining of frequency, urgency, nocturia and terminal gross hematuria of three weeks' duration. She had had an episode of urinary distress two years earlier, associated with a suprapubic abscess. This was treated with antibiotics.

Examination revealed a nodular suprapubic mass 4 by 5 cm., which, as indicated by bimanual palpation, seemed related to the wall of the bladder. Intravenous urographic study revealed normal upper tracts. The dome of the bladder appeared irregular in the cystogram. On cystoscopic study a solid-roofed tumor 4 cm. in diameter projected into the lumen from the left of the midline. Biopsy of this mass (Fig. 2, *above*) showed markedly metaplastic cells dipping into polypoid tissue projections. Clumps of atypical cells were noted, with tissue spaces surrounded by dense lymphocytic reaction. Because of necrosis and inflammation, an exact diagnosis was not possible. A repeat biopsy (Fig. 2, *below*) showed numerous atypical cells with moderately large hyperchromatic nuclei, generally anaplastic and pleomorphic, tending also to form glands. A tendency to mucin formation was noted peripherally.

A diagnosis was made of adenocarcinoma of the urinary bladder, mucus-secreting type.



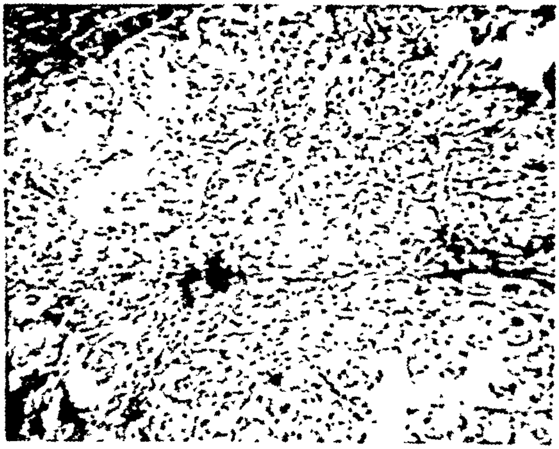


Fig. 3 (Case 1).—Photomicrograph of repeat biopsy specimen, showing anaplastic and pleomorphic cells with tendency to mucin and gland formation.

Obstetric and Gynecologic Surgery

The Oxytocics in Obstetrics

A Clinical Evaluation of Synthetic Oxytocin (Syntocinon*)

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Syntocinon was employed in 210 cases for the following indications: uterine irritability, ejection of milk, induction of labor and postpartum disturbances. Dosage varied with the indications for use.

A slight, fleeting elevation in blood pressure was noted in 2 cases.

Loss of blood was minimal in most of the cases. Five patients exhibited soft uteri and some bleeding. This was controlled by administration of 1 cc. of intramuscular Methergine, thirty-five to forty minutes after intravenous injection of Syntocinon.

Regardless of the route of administration of Syntocinon and the anesthetic employed, Syntocinon proved to be a safe and effective oxytocic.

THE uterus is undoubtedly one of the most dynamic organs in the body. Since 1732, the literature has been replete with accounts of investigations of uterine physiology. It is a fact that the pregnant uterus becomes increasingly motile until, at term, uterine contractions become forceful enough to expel the fetus. Exactly what constitutes the stimulus for the initiation and perpetuation of this powerful uterine contractility, however, is not known. In spite of its relatively limited knowledge medical science has been able, through the employment of specific drugs known as oxytocics, to stimulate and increase the motor activity of the uterus. The oxytocics are, therefore, the drugs of greatest consequence in all stages of labor.

Two of the most common oxytocic agents in present use are the alkaloids of ergot (ergonovine) and the oxytocin principle of the posterior lobe of the pituitary gland. In addition to these, other oxytocics have found their way into the practice of obstetrics.

Quinine slightly influences the pregnant uterus, crossing the placental barrier. Histamine acts directly on the myometrium, but the usual therapeutic dose, when clinically investigated, failed to elicit significant oxytocic response. Epinephrine in large doses induces uterine motility, while small amounts inhibit contractions. Many other preparations known to have some stimulating influence on uterine motility have been replaced by newer and more effective drugs.

Methylergonovine, a semisynthetic ergot

From the Department of Obstetrics, Bernalillo County-Indian Hospital, Albuquerque.

*Syntocinon furnished by Mr. H. Althouse, Sandoz, Pharmaceuticals.

alkaloid, is most appropriately administered at the end of the third stage of labor. It causes a strong uterine contraction that constricts the large blood sinuses as soon as the placenta is expelled. Postpartum hemorrhage is further prevented by its prolonged action. A contraindication to the use of ergot is the second stage of labor, as compression of the cord and asphyxiation of the fetus are almost certain. If it is given before the placenta is detached from the uterine wall, separation and delivery will be delayed, because the lower uterine segment is the area most profoundly affected by ergot.

The action of the oxytocin fraction of the posterior pituitary lobe closely simulates the physiologic activity of the pregnant uterus. This is, the contractions begin from the fundus and proceed downward. Its systemic duration is short. Pitocin may be administered with caution in the first, the second and, sometimes, the third stage of labor.

Oliver and Shafer[1] discovered, in 1895, the extract of the posterior pituitary gland containing oxytocin and vasopressin hormones, but it was first used in obstetrics [illegible] 1.[2] In [illegible] ring pure oxytocin. In 1955, Boissonnas, Guttmann, Jaquenoud and Waller,[3] developed a new synthesis of oxytocin (Syntocinon). By this method, for the first time, the production of synthetic oxytocin on a large scale became possible. Being synthetic, it is pure and free of vasopressin. Studies by various investigators have shown that, pharmacologically, Syntocinon is qualitatively and quantitatively equivalent to natural oxytocin.

Materials, Methods and Results.—Synthetic oxytocin (Syntocinon) was used on 210 patients at the Bernalillo County-Indian Hospital in the following categories: (1) uterine irritability; (2) milk ejection; (3) labor induction and (4) postpartum.

1. *Uterine Irritability:* Knowledge of the stage of uterine irritability as pregnancy nears an end may serve as a decisive tool in the management of many terminal obstetric problems. Increased uterine activity implies that spontaneous labor is imminent, while the opposite is true of the relatively quiescent uterus. Unless uterine irritability is heightened to the degree required for spontaneous labor, the accepted methods of induction.

bed rest for about an hour before the test and the abdomen observed for fifteen minutes to detect any spontaneous contractions. Syntocinon in doses of 0.01 unit cubic centimeter in 10 cc. of 5 per cent G/W is prepared in a syringe. At the end of a spontaneous contraction, 0.01 unit is injected intravenously. This is repeated at one-minute intervals until a contraction occurs. The total dose is the oxytocin sensitivity index. It will be frequently noted that the induced contraction is stronger than the preceding spontaneous contraction. This is indicative of myometrial participation to the point of exciting the entire uterus.

The oxytocin-sensitivity test was applied to 10 patients admitted to the hospital in false labor. Each underwent a complete anamnesis and physical and pelvic examinations. When twenty-four hours had elapsed and signs of labor had not appeared, the test was used. Results revealed that patients who received 0.04 units or less of Syntocinon went into labor spontaneously, with or without rupture of the membranes. In 1 patient labor was induced and delivery accomplished in four hours and 16 minutes. Those who required more than 0.04 units before responding with a contraction showed no signs of labor and were discharged from the hospital the next day. These returned in active labor after not less than five days.

2. *Milk Ejection*: Only in recent years has the oxytocin hormone of the posterior pituitary gland been employed for its activity in the ejection of milk from the engorged human breast. This action of oxytocin on the mammary gland was first observed by Ott and Scott[8] in lactating goats and was confirmed by numerous investigators. Experimental work led to the conclusion that lactation is completed in four stages: 1. Mastogenesis, [illegible] g early in pregnancy is under th[illegible] of the estrog[illegible] cause en[illegible] of the glandular tissue and ducts, the alveolar development being determined by progesterone. 2. Lactogenesis follows the production of prolactine by the acidophil cells of the anterior pituitary after separation of the placenta. 3. Galactopoiesis, the continuing secretion and excretion of milk, is under the neurohormonal stimulus of sucking, via the hypothalamus and the posterior pituitary gland. 4. Cessation of lactation results when sucking is discontinued and prolactin production ceases. With the recurrence of the gonadotrophic function of the pituitary, prolactin production is inhibited. The onward flow of milk is under the influence of the oxytocin hormone of the posterior pituitary, which causes contraction of the unstriped muscle fibers around the glands and ducts. When the production of this hormone is insufficient, engorgement of the breast is manifest.

Oxytocin is not effective until there is milk in the breast and is useless in the treatment of simple engorgement due to venous and lymphatic stasis occurring on the second to fourth postpartum day. Numerous investigators have recommended its administration to mothers with breasts painfully engorged with milk. Clinically, Douglas, Kramer and Bonsnes[9] reported encouraging results with oxytocin; softening of the breast occurred, and the infant obtained an adequate amount of milk.

In this study Syntocinon was employed for the relief of mammery engorgement in 10 normal lactating women. Nine were in their fourth or fifth postpartum day; one was in her thirteenth postpartum month. Two units of Syntocinon were given intramuscularly. Within two minutes ejection of milk and relief of pain were effected in all patients.

A 36-year-old Indian woman, gravida 5, para 4, aborta 1, was admitted to the Medical Service on A[illegible], for diagnostic study.

Three days after admission the patient complained of severe pain in the breast, due to engorgement. She was unsuccessfully treated with Meperidine. Upon obstetric consultation it was learned that the patient had been delivered thirteen months previously on the Reservation and was still breast-feeding her infant. She expressed the desire to continue to do so after her hospitalization. Syntocinon, 2 units, was given intramuscularly. Within five minutes milk was emitted from the breasts and the pain subsided.

3. *Initiation of Labor*: The employment of oxytocics to hasten the process of childbirth is not new. It was not until 1943, however, that the method of intravenous drip administration of these agents aroused universal interest. Since that time, Hellman[10] and many others have discussed the indications and contraindications of this procedure.

Caldeyro-Barcia and his associates[11] demonstrated the relation between the rate of infusion of oxytocin and the resulting alterations in uterine contractility and the rational basis for a method of evaluation the functions of the pregnant human uterus. The results seem to suggest the possibility of employing the intravenous infusion of Syntocinon as a research tool for exploring uterine function in normal and abnormal situations. Caldeyro-Barcia and Poseiro[12] stated that Syntocinon ... 20 mm. of mercury, was noted in 2 patients. Similar elevations in blood pressure had been observed previously in women whose labor was induced with pitocin.

CASE 1.—A 25-year-old Indian woman, para 5, gravida 4, was admitted to the obstetric department of the hospital on March 16, 1958. She stated that her last menstrual period had occurred on June 8, 1957. Examination disclosed a full-term pregnancy, the fetal head engaged and the cervix effacing. Labor contractions were not palpated.

Owing to the fact that the patient lived on the Navajo Reservation, 150 miles from the nearest hospital, she was detained for a uterine irritability test. Uterine contractions were elicited with 0.02 units of Syntocinon. Intravenous drip Syntocinon was then begun, to which the patient responded well. She was delivered after a labor of four hours and sixteen minutes.

During labor an increase in blood pressure of only 10 mm. of mercury was recorded. The intravenous drip Syntocinon was discontinued before delivery, and a severe hemorrhage ensued. This was controlled with uterine massage and intravenous Methergine.

Noack[13] studied postpartum hemorrhage in 58,000 woman between 1937 and 1953 and reported the incidence at 10 per cent. When those with predisposing factors, such as operative delivery, placenta praevia, premature separation of the placenta, multiple pregnancy and hydrmanios were excluded and only those with spontaneous vertex delivery considered, the number remained at 4,474. Noack concluded that previous abortion or operative delivery, bleeding in each pregnancy, prolonged pregnancy, prolonged labor and infants above the average in weight were factors predisposing to postpartum hemorrhage. Prophylactic intravenous injection of oxytocic drugs after delivery of the anterior shoulder was recommended. Daro and his co-workers[14] advocated the pitocin infusion for the control of hemorrhage due to uterine atony. Shulman and his association,[15] however, stated that 8 patients with uterine atony were studied and failed to respond to treatment with pitocin and ergotrate, all requiring surgical treatment. British physicians used an alkaloid of ergot, without better results.

The present uterotonic drugs are not clinically devoid of undesirable side effects. A comparative clinical evaluation of various oxytocin preparations administered to 894 patients was compiled by Friedman,[16] who reported that only dihydroergotamine was ineffective. Ergonovine and methylergonovine were shown to possess emetic and vasopressor properties. The purified oxytocic principle of the posterior pituitary gland (Syntocinon) alone was almost free of untoward effects.

One hundred and eighty consecutive patients, white, Indian and Negro, who were delivered by the vaginal route, were given 5 units of Syntocinon intravenously at the presentation of the anterior shoulder. The first 5 patients exhibited soft uteri and bleeding within thirty-five to forty minutes after delivery and were successfully treated with 1 cc. of intramuscular Methergine. The remaining patients were routinely given 1 cc. of Methergine in addition to the Syntocinon before leaving the delivery room. Two of these patients had hemorrhages on the sixth postpartum day, but dilation and curettage revealed that the bleeding was due to retained fragments of placenta. The bleeding encountered in the first 5 patients may possibly be explained by the inactivation of Syntocinon by oxytocinase. Bleeding in the other 175 patients was minimal, not exceeding 50 cc. The placenta was manually removed in 2 instances.

Ten additional patients were given 10 units of intravenous Syntocinon after delivery of the infant by cesarean section. This permitted visualization of the uterine contraction, which proved to be from the fundus downward. The amount of bleeding was reduced, affording a better visual field for repair of the myometrium.

RÉSUMÉ

Le Syntocinon a été utilisé dans 210 cas; il s'agissait des indications suivantes: irritabilité utérine, éjection de lait, début du travail de l'accouchement et troubles post-partum. Les doses administrées ont varié suivant les cas.

Une élévation minime et passagère de la pression sanguine a été notée dans deux cas.

Il y a eu une perte de sang insignifiante dans la plupart des cas. Cinq malades ont présenté un utérus ramolli et un peu de saignement, état qui a pu être neutralisé par l'administration intramusculaire de 1 cc de Methergine 35 à 40 minutes après l'injection intraveineuse de Syntocinon.

Quels que soient la voie d'administration du Syntocinon et l'anesthésique utilisé, le Syntocinon s'est révélé être un oxytocique sûr et efficace.

SUMARIO

Syntocinon foi empregado em 210 casos com as seguintes indicações: irritabilidade uterina, retenção de leite, inducção do trabalho de parto e disturbios do posparto. Foi notada uma discreta elevação da pressão em 2 casos. A perda de sangue foi minima em muitos casos. 5 doentes exibiram discreto sangramento e amolecimento uterino, o que foi controlado pela administração de 1cc. de Methergine intramuscular, 35-40 minutes depois da injeção de Syntocinon. Esta droga provou ser um ocitocico seguro e eficiente sem correlação com a via de administração nem o tipo de anestesico empregado.

ZUSAMMENFASSUNG

Syntocinon wurde in 210 Fällen bei folgenden Indikationen angewandt: Reizbarkeit der Gebarmutter, Ausscheidung von Milch, Induktion von Wehen und Wochenbettstorungen. Die Dosierung wechselte je nach der vorliegenden Indikation.

Eine leichte vorubergehende Blutdruckerhobung wurde in zwei Fallen beobachtet.

la inducción del parto y postpartum. La dosificación varía con las indicaciones.

En dos casos se produjo una ligera elevación pasajera de la presión sanguinea. La mayor parte de las veces la pérdida de sangre fué mínima. En cinco enfermas se pudo apreciar un útero blando con ligera hemorragia. Esto fué combatido con la administración intramuscular de 1 c.c. de Metergina 35 o 40 minutos después de la inyección de Syntocinon.

Independientemente de la forma de administración y del anestésico empleado el Syntocinon ha demostrado ser un oxitécico efectivo y seguro.

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"The Dentist," by Jan Victoors (1620-1676), who was born in Amsterdam and followed the school of Rembrandt. Many of his subjects were taken from the Old Testament. but he also painted peasant assemblies, charlatans, landscapes, markets, etc. The dentist depicted in this painting was apparently itinerant and worked before an admiring audience. It was painted in 1654 and gives an insight into the humorous aspect of the painter's character. (*Reproduced by courtesy of the Rijksmuseum, Amsterdam, The Netherlands.*)

—*Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)*

Detection of Carcinoma in Gynecology by Cytologic Technics

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EMERSON once said "Nothing great is ever achieved without enthusiasm." That statement certainly is applicable to the field of cytology. Since Papanicolaou's early efforts and introduction of the cytologic technic for the diagnosis of cancer, a tremendous amount of enthusiasm has been generated for the procedure all over the world, and innumerable articles have been written about it. It is inconceivable, therefore, that significant progress should not have been achieved in the scientific study and clinical application of cytologic technics. No surgeon in clinical practice, with its time-consuming commitments, can find time to keep abreast of all current developments pertaining to his specialty; so it is the responsibility of professional Congresses, therefore, to summarize and present such pertinent information.

The author emphasizes the importance of the proper management of the patient, the collection of material and the proper preparation and treatment of the slides. Emphasis is placed upon making the smear by squeezing the collected material between glass slides and spreading it evenly. The limitations of the cytologic procedure should be recognized, particularly with regard to the incidence of "false negative" and "false positive" tests; and, especially, the limitations of the examiner in regard to dyskaryotic cells should be remembered. The usefulness of the technic is emphasized. The procedure is an important addition to the armamentarium of prophylactic and diagnostic medicine. A plea also is made for wider use of the cytoprognostic test in the management and treatment of these patients.

on the cyclic changes in the cells in vaginal smears related to the menstrual cycle. Eighty-one years later Papanicolaou published his studies on the same subject, at a time when it was highly controversial. This added further impetus to his efforts, but it was not until the late 1930's that he began his studies with Traut on the potentiality of vaginal smears in the diagnosis of malignant tumors, which resulted in their publication in 1943. There was a lag of ninety-six years between the time the epithelial cells of the female genital tract were first studied and the use of such cytologic means for the diagnosis of carcinoma was conceived.

Exfoliative cytology would not have reached its present state of development were it not for the technical development made by Papanicolaou. The ether-alcohol fixation of wet films and the specialized method of staining are invaluable for the preservation and definition of the fine morphologic details of the cells.

Preparation of Smears.—There is no phase of cytology that is more important, except the actual cytologic diagnosis, than the collection and preparation of the material for examination. Failure on the part of the attending physician to heed the principles that have been set forth for this purpose results in a waste of his efforts and the patient's money. The obstetrician and gynecologist are probably better oriented than the average physician in this facet of the technic, but even many of these, judging from my own experience, do not submit material adequate for study. There are many specialized methods for the procurement of the specimen. A wooden tongue blade, Ayer's spatula, cotton applicators, cervical caps, tampons and suction pipettes have all been advocated at different times in the procurement of the material for study, with varying advantages and disadvantages. Originally I recommended that one smear be made from the lateral vaginal wall (for endocrine evaluation); another from the material in the posterior fornix of the vagina, and a third from the material in the cervical canal. This material usually is irregularly smeared on glass slides (in varying amounts) and then dropped into the ether-alcohol fixative. Often this results in irregular films, some areas being excessively thick and others excessively thin. Few persons take the trouble to make uniform smears, with adequate separation of the cells.

As an improvement, Reagan[2] has recommended that a drop of the material scraped from the vaginal portion of the cervix, and another drop aspirated from the endocervix, be squeezed and each spread between glass slides in a manner similar to that used in making bone marrow films.

For optimum cellular preservation, the slides are immediately plunged into alcohol-ether fixative. Drying of the smears to any degree prior to fixation results in a considerable artefact. As a rule, the slides are left in the fixative for a minimum of one hour, after which they can be removed.

Clinical Application.—There are three clinical areas for application of the cytologic study of desquamated cells in the female genital tract. One of these is the screening of a large number of patients; the second is the diagnostic application of the procedure, and the third is its prognostic usefulness in the treatment of cervical carcinoma.

I have attempted to secure some recent statistical information on the value of cytologic study. Much of this was discussed in October, 1956, at an International Congress on Cytology in conjunction with the Annual Meeting of the American Society of Clinical Pathologists, transactions of which have recently been published.

Table 1 reveals a detection rate varying from 0.23 to 1.85 per cent in screening for cervical carcinoma. It should be pointed out, however, that the higher percentage is usually associated with private practice, in which some degree of selectivity of test material exists.

TABLE 1.—*Cytologic Study as a Screening Procedure*

	Number of Persons	*Positive Detection Rate, %*
Erickson	80,000	0.78
Dahlin et al	20,310	0.89
Martin et al	11,207 (private)	1.00
Erickson (Memphis)	130,000	0.6
Siegler (St. Lukes)	25,000	0.7
[illegible] (Georgia)	17,761	0.66
12 *additional reports*		0.23-1.85

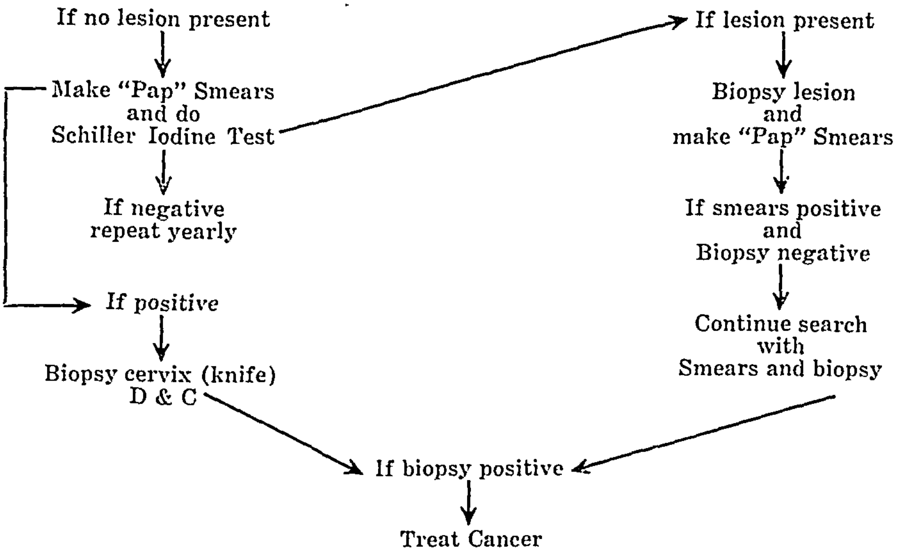
The accuracy of diagnostic cytologic study is revealed by the information in Table 2, which is limited to uterine carcinoma. The accuracy of positive diagnoses varies from 92 to 98.9 per cent. False positive reports have been as high as 11.6 per cent and false negative reports as high as 8 per cent.

chief differences are as follows: With invasive carcinoma the cells tend to be smaller, show more pleomorphism, exhibit more multinucleation and have macronucleoli when contrasted with the larger, more uniform, single cells of carcinoma *in situ*. Additional studies by McCormack and Belovich[5] in a series of 269 cases identified 113 as carcinoma *in situ* and 156 as invasive carcinoma of the cervix, with an accuracy proportion of 93 per cent and 94 per cent respectively.

The case for endometrial carcinoma is not so good (Table 2). Berg and his associates[6] reported 55 cases, in two-thirds of which there was a positive or suspicious smear prior to operation. After operation the smears were reviewed and 3 more carcinomas were identified, raising the incidence to 75 per cent. They pointed out, however, that cytologic study is not so important in the detection of endometrial carcinoma, since symptoms were present in a high percentage of the cases that would have led to the diagnostic dilation and curettement.

In Table 3 I have outlined a proposed schedule for the detection of carcinoma which, if faithfully followed, should be effective in detecting carcinoma of the f

TABLE 3.—*Proposed Schedule for Detection of Carcinoma (Routine Examination Yearly)*


If no lesion present
Make "Pap" Smears and do Schiller Iodine Test
If negative repeat yearly
If positive
Biopsy cervix (knife) D & C
If lesion present
Biopsy lesion and make "Pap" Smears
If smears positive and Biopsy negative
Continue search with Smears and biopsy
If biopsy positive
Treat Cancer

male genital tract in its earlier stages. It is recommended that patients undergo such examinations at yearly intervals. When the cervix is first examined, it is wise to perform Schiller's iodine test, in which there has been a recrudescence of interest, because of its ability to indicate cervical carcinoma. If a "decolorized" area is seen by this procedure, smears from this area and a biopsy are recommended. If the result is negative, smears alone are made in the manner previously described. If both of these procedures yield negative results, then the examination is repeated in a year. If the smear is positive, a conization biopsy of the cervix with a cold knife is recommended. If a lesion is present, revealed either with or without the Schiller iodine test, then the lesion is biopsied and smears are made. If these are negative, the examination is repeated in a year. If the smears are positive and the result of biopsy negative, there should be a continued search with smears and biopsies until the problem is solved.

From my personal experience, the cytoprognostic test initially reported by Graham,[7] a procedure which has its usefulness in the management of radiation therapy for carcinoma of the cervix, is not sufficiently appreciated and used. After the institution of radiation treatment for carcinoma, certain changes occur in the desquamated cells, both neoplastic and nonneoplastic, in the genital tract. These consist chiefly of enlargement of the cytoplasm and the nucleus, development of vacuoles in the cytoplasm or nucleus, wrinkling of the nucleus, multinucleation of cells and serration of the cells. Usually 100 consecutive cells are counted, either malignant or nonmalignant. If more than 75 per cent of these show the aforementioned changes, it is concluded that the tumor would show a good response to radiation (RR). If fewer than 60 per cent of the cells show these changes, it is then the impression that a poor radiation response will ensue. The peak of such changes occurs usually about the thirteenth day after the beginning of treatment. It would appear, therefore, that this test has considerable importance in determining whether or not radiation alone would be sufficient for the particular patient, or whether it should be supplemented or replaced by radical operation.

In one series of 105 cases,[8] 66 patients with a good RR were studied. Of this group 90.9 per cent were free of symptoms five years later, and only 0.1 per cent showed evidence of recurrent carcinoma. Of 39 patients who had poor responses in this study, only 20.5 per cent were free of symptoms after a five-year interval, and 79.5 per cent showed evidence of recurrence.

Similar changes may occur in desquamated cells of the vaginal tract spontaneously or after stimulation with hormones such as androgens. In this instance the response in the cells is classified as "sensitivity response" (SR). If more than 10 per cent show the changes, it is classified as a good SR. If fewer than 10 per cent show changes, it is classified as a poor SR. In a study by Graham cited by Kjellgren,[7] of a series of 136 patients treated by irradiation alone, when a significant SR

and mitotic activity at times resembling neoplasia. On the other hand, the neoplastic process may produce changes in the cervix early in its development that also include metaplasia, atypical proliferation and partial loss of polarity, which are not definitely identifiable as carcinoma *in situ*. It is logical to conclude, therefore, that clear differentiation of an inflammatory process from a neoplastic process in this stage of development, when overlapping criteria are present, is impossible.

Similarly, cells desquamated by such epithelium will be highly atypical, not clearly neoplastic, and will exhibit features that cause cytologists to refer to them as atypical or dyskaryotic cells. In the standard Papanicolaou classification these cells may be classified as Class II or Class IIIB. In a newly-issued journal, *Acta Cytologica*, which reached my desk only a few days ago, there was a symposium by leaders in the field of cytology in which the dyskaryotic cell was clearly defined. According to Graham,[11] the nucleus

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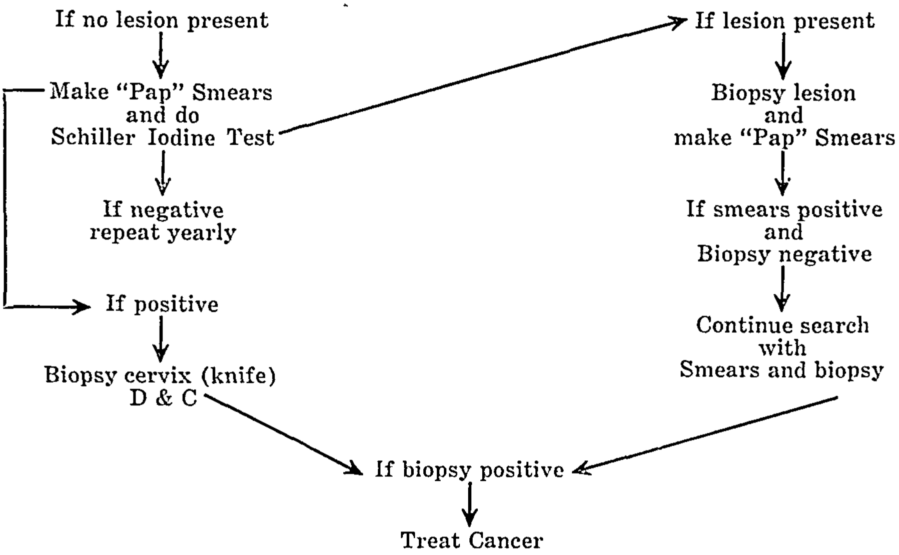
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tivas"; especialmente debe recordarse lo difícil que son de interpretar la células discarióticas. Insiste el autor en la utilidad de su técnica considerándola como una importante ayuda al armamentarum para la profilaxis, así como para el dignóstico médico. Pide un mayor empleo del test citoprognóstico en el tratamiento de estos enfermos.

RIASSUNTO

Viene messa in luce l'importanza della raccolta del materiale, dell'accurata preparazione dei vetrini e della loro colorazione. Lo striscio deve essere fatto comprimendo il materiale fra due vetrini in modo da spargerlo uniformemente. Bisogna ricordare che i metodi citologici hanno delle limitazioni, soprattutto in rapporto alle risposte false positive e false negative e in rapporto alla difficoltà di riconoscere le alterazioni nucleari. La tecnica tuttavia è molto utile e rappresenta un mezzo importante per la profilassi e la diagnosi. Esso pertanto merita di essere ulteriormente diffuso.

SUMÁRIO

O autor põe ênfase na importância do cuidado adequado do paciente, a coleta de material e a adequada preparação e tratamento das lâminas.

Ênfase é dada à maneira de obter esfregaço adequado, apertando o material obtido entre lâminas de vidro, espalhando o de maneira uniforme.

As limitações do procedimento citológico devem ser reconhecidas particularmente com relação à incidência de testes "falso positivo" e "falso negativo"; em particular as limitações do examinador com relação às celulas diskarioticas deve ser lembrada. O emprego da técnica é discutido.

O procedimento é uma adição importante ao armamentário da medicina diagnóstica e profiláctica. Súplica é feita para maior uso do teste de citoprognóstico no tratamento dêstes pacientes.

ZUSAMMENFASSUNG

Der Verfasser hebt hervor, dass es wichtig ist, Sorgfalt beim Umgang mit dem Patienten, bei der Gewinnung des Untersuchungsmaterials und bei der Anfertigung und Behandlung der Präparate zu verwenden. Er betont, dass der Abstrich durch Quetschung und gleichmässige Ausbreitung des Untersuchungsmaterials zwischen den Glasplättchen hergestellt werden muss. Man muss lernen, dass dem zytologischen Verfahren Grenzen gesetzt sind besonders im Hinblick auf die Häufigkeit "falscher negativer" und "falscher positiver" Ergebnisse; es darf besonders auch nicht vergessen werden, dass die Möglichkeiten des Untersuchers, Kernveränderungen in den Zellen zu beurteilen, nicht unbegrenzt sind. Der Nutzen der Technik wird hervorgehoben. Das Verfahren ist ein wichtiger Zuwachs im Rüstschatz der prophylaktischen und diagnostischen Medizin. Die zytologische Untersuchung für prognostische Zwecke sollte in grösserem Umfang bei der Behandlung der Kranken angewendet werden.

RÉSUMÉ

Discussion sur l'importance de la technique des frottis ainsi que du prélèvement du matériel à examiner, au point de vue diagnostic et prophylaxie. Les limites des examens cytologiques sont indéniables ("faux tests positifs" et "faux tests négatifs"), sans oublier celles de l'anatomopathologiste en ce qui concerne les cellules dyskaryocinétiques. L'auteur recommande une utilisation plus courante du test cytopronostique.

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Massive Hematoma of the Broad Ligament Complicating Cesarean Section

Report of a Case

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HARTFORD, CONNECTICUT

THIS is in all probability the first time that a case of this nature has ever been reported. The rarity of what occurred is supported by the fact that an intensive search of the medical literature has failed to uncover another exactly similar case, although it seems most probable that similar cases have occurred in the past and were either unrecognized or never reported.

J. Fuentes Jr.[1] did report a case of hemorrhage of the broad ligament secondary to rupture of the uterine vessels as a cause of maternal death, but in this case the condition did not complicate cesarean section and was apparently not recognized until it was demonstrated at postmortem examination.

A rare case of massive hematoma of the broad ligament complicating cesarean section is reported. It is the author's impression that this is the first such case to be reported. The experience has convinced him (1) that the surgeon should never minimize the possible hazards of cesarean section and (2) that abdominal bleeding may be manifested in bizarre fashion. In this case, being unaccompanied by pain, it led to an erroneous diagnosis by the resident in obstetrics.

REPORT OF CASE

Mrs. J. Q., a white woman aged 22, para 2, gravida 3, was admitted to the J. J. McCook Hospital on Sept. 19, 1956, for a third cesarean section. The indication for the first section, performed in 1953, was cephalopelvic disproportion. The second section had been performed in April 1955.

Clinical History.—The patient had undergone appendectomy in 1953, tonsillectomy and adenectomy at the age of 5 years, and excision of a mole on the back in childhood. When she was 7 years old there was some question of tuberculosis, and she was sent to a health camp for several months. The most recent thoracic roentgenogram, taken on July 10, 1956, was normal. The patient had always complained of low back pain during pregnancy.

Family History.—The patient's mother died in a motor accident at the age of 38. The father was living and well. Her husband and her two children were living and well. There was no family history of carcinoma, tuberculosis or insanity.

Present Illness.—LMP Dec. 22, 1955; EDC Sept. 29, 1956. The present pregnancy was not attended by any abnormalities except for Rh-negative antibodies in a dilution of 1:128 on Sept. 19, 1956. On August 21 no antibodies had been present. Serologic values were "negative."

Examination on Admission.—Physical examination showed the patient to be pale and tired-looking. Her height was 64 inches (162.5 cm.) and her weight 131 pounds (159.4

From the Department of Obstetrics, J. J. McCook Memorial Hospital, Hartford.
Submitted for publication Jan. 8, 1957.

Kg.). Examination of the eyes, ears, nose and throat revealed no abnormality. There were carious teeth both above and below. The tonsils had been removed. The thyroid was not enlarged. There was no cervical adenopathy.

Examination of Chest.—Auscultation and percussion revealed no abnormality. The apex was in the fifth left interspace, 3½ inches (8.7 cm.) left of the midline. A roentgenogram of the chest taken on July 10 was normal. The blood pressure in millimeters of mercury was 98 systolic and 56 diastolic; the pulse rate was 71 and the respiratory rate 20. The breasts showed normal antepartum enlargement. There were no palpable masses. The nipples were dry. Pigmentation and elevation were average.

Upper Extremities.—The arms were normal, with no axillary adenitis, scars, deformities or limitation of motion.

Back.—There was no deviation of the vertebral column in any direction.

Abdomen.—A midline scar from previous sections was present. The height of the

Operation.—The patient was taken to the operating room for cesarean section. Spinal anesthesia was employed. The blood pressure before induction was 120 systolic and 60 diastolic, the pulse rate 86. After administration of the spinal anesthetic the blood pressure was 95 systolic and 60 diastolic and the pulse rate 80. A low flap transverse cesarean section was done, and the patient was delivered of a normal boy at 8:44 a.m., with loss of blood lower than average. The adnexae were inspected and were normal. The paravertebral gutters and the cul de sac were sucked out. The lower uterine segment was inspected for bleeding but was observed to be dry. The abdominal cavity was closed in the usual manner, and the patient left the operating room in good condition. The blood pressure remained above 100 systolic until noon, when it dropped to 88 systolic and 60 diastolic. At 1:30 p.m. it fell to 70 systolic and 48 diastolic, and 500 cc. of blood was given. The attending staff was *not* notified by the resident in obstetrics. At 5 p.m. the blood pressure was 100 systolic and 70 diastolic and the pul the abdominal cavity. A huge purplish black hematoma about the size of a football, containing possibly 2 to 3 quarts of coagulated blood, was observed on the right side, extending from the lower uterine segment up to and pressing against the undersurface of the liver. Apparently it had originated in the lower uterine segment and dissected its way upward between the leaves of the broad ligament. A vertical incision was made in the huge mass, several handfuls of firmly organized blood clot were scooped out and the mass clamped at its base with Kocher clamps. The bladder flap sutures were cut; the flap was reflected anteriorly, and supracervical hysterectomy was done, since the source of bleeding could not be immediately established and supracervical hysterectomy was the surest and most expeditious method of controlling the hemorrhage.

It was amazing to note the extent of the destruction in the lower uterine segment. All that remained was a black mass of mushy, friable tissue. A blanket of gelfoam was placed over the friable stump. The reflected vesicouterine tissue was pulled over the gelfoam and sutured to the rectovaginal septum, although the edge of the reflected tissue could not be brought into actual touch with the septum. In anticipation of a stormy postoperative course, a Levine tube was passed into the stomach and 2 cc. of calcium pantothenate given at once and every three hours for four doses as a prophylactic against distention. The blood pressure at completion of the operation was 90 systolic and 60 diastolic, the pulse rate 76. Convalescence was surprisingly smooth and uncomplicated; the patient was discharged on the eighth postoperative day, in good condition. The total quantity of blood given this patient by transfusion was 4,000 cc.

COMMENT

In the author's opinion there is much to be learned from the case reported. First of all, one should never minimize the potential hazard of a cesarean section, either in one's own mind or in the mind of the patient. There seems to be a growing tendency to regard cesarean section as a trifle, simply because the mortality rate is low. It must be borne in mind that somewhere along the line some patient is sooner or later bound to be the unfortunate victim of anesthetic, cardiac, vascular or other accident resulting in serious illness or even death. One should therefore guard against thinking or speaking of this procedure in terms of oversimplification.

Second, one must realize that abdominal bleeding may manifest itself in quite a bizarre fashion; so much so that, in this particular case, the resident house officer admitted unequivocally that he missed the diagnosis of abdominal bleeding because of the unusual absence of pain and because of the softness and flatness of the abdominal wall. It was his impression that the patient was suffering from severe postoperative circulatory collapse, resulting possibly from the combination of surgical treatment, anesthesia and medication. This, of course, could well have been the case, but it was the constant tendency of the blood pressure to fall and the patient's failure to respond favorably to the administration of blood that led to the suspicion that progressive bleeding was the underlying cause. In retrospect it can be understood why the abdominal wall was soft and flat and the patient free from pain; obviously, there was no free blood in the abdominal cavity to cause an insult to the parietal peritoneum. Frankly, it was not the "feel" of the abdominal wall that prompted me to reopen the abdomen, but simply the inexplicable conviction that something must be wrong because of the patient's inability to stabilize after receiving 1,000 cc. of blood and the fact that she was going downhill so rapidly.

What the end result of this case would have been had the patient been seen earlier by the attending staff, and had been given more blood with fibrinogen over a shorter period, is difficult to conjecture. The fact remains, however, that this patient was almost beyond the point of salvage. The surgical chance of saving the patient (1 in 100) was not bypassed;

it emphasized in the strongest terms the fact that no patient who is going downhill rapidly from loss of blood should be denied even the slightest chance of recovery by hesitation on the part of the surgeon to reoperate. Conservative treatment should by all means be resorted to at first, but undue delay in reoperating should be guarded against when conservatism has failed. The administration of blood and coagulants through multiple ports (and under pressure if necessary), good anesthesia (the anesthetist in this case, Dr. Earl Mahoney of the Hartford Hospital Department of Anesthesia, was commended for his excellent work), a rapid approach to the point of bleeding and speedy arrest of the hemorrhage may be attended by the reward of the saving of the patient's life and by intense gratification to the surgeon and his staff.

ZUSAMMENFASSUNG

el curso de una cesárea. El autor tiene la idea de que es el primer caso señalado en la literatura. La experiencia le ha convencido de que por un lado el cirujano no debe nunca menospreciar los riesgos de una cesárea, u por otro que una hemorragia intra-abdominal puede presentar formas poco corrientes. En esta ocasión se llegó a un diagnóstico equivocado, pues además la enferma no tenía ningún dolor.

RIASSUNTO

Viene riferito un caso di ematoma massivo del legamento largo che complicò un cesareo. L'autore ritiene che questo sia il primo caso riferito nella letteratura. L'sperienza lo ha persuaso 1) che il chirurgo non deve mai sottovalutare i rischi del taglio cesareo e 2) che l'emorragia addominale può manifestarsi anche in modi inconsueti. Nel caso descritto, ad esempio, essa non si accompagnò a dolore.

Orthopedic Surgery

De Quervain's Disease

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BOSTON, MASSACHUSETTS

A series of 84 cases of De Quervain's disease is presented. Eighty-three (99 per cent) of the patients were treated successfully by operation. Conservative therapy, rather than surgical intervention, is to be greatly discouraged, as it only prolongs disability and loss of working hours. Local injections of hydrocortisone acetate have no value in the therapy of this disease.

The actual cause of the disease is unknown, although it is generally accepted in industrial circles as related to manual labor.

A surgical technic for treatment of De Quervain's disease is described.

DE QUERVAIN'S disease continues to be a frequent diagnostic problem in the field of industrial medicine in spite of the many papers that have been written describing it. The purpose in writing this article is twofold:

1. To emphasize the great economic loss caused by failing to recognize this condition for what it is and therefore treating it conservatively. (De Quervain's disease fails to respond to any treatment short of surgical intervention.)
2. To emphasize the excellent results of surgical treatment.

Several of our patients were treated for months or years with physiotherapy and failed to respond to treatment. Actually, this condition, like epicondylitis ("tennis elbow") is misdiagnosed frequently. As a result, it fails to respond to therapy.

In our series of 84 patients it was observed that local injections of hydrocortisone acetate (17-hydroxycorticosterone-21-acetate), which was prescribed for 15 patients, brought no permanent relief, although in a few instances a temporary or palliative effect was produced. The use of cortisone has been suggested as a possible means of avoiding operation, but certainly any treatment that produces short-lived results or is of no value whatsoever is to be discouraged.

Frequently today, De Quervain's disease is treated as chronic tenosynovitis, chronic sprain, chronic arthritis, etc., in the outpatient clinics of large hospitals, and inadequate measures, such as prolonged physiotherapy and/or even plaster casts, are resorted to for weeks or months. Both treatments are valueless and result in great economic loss to the patient.

Pathologic Picture.—De Quervain's disease is the term applied to a painful, disabling condition affecting the tendon sheath overlying the tendons of the abductor pollicis longus and extensor pollicis

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brevis muscles at the radial styloid process of the wrist. Since the tendon sheath as a whole is usually involved and not merely the synovial lining between the sheath and the tendons, the best noneponymic term for this lesion is stenosing tendovaginitis or tenovaginitis. Both in the literature and in conversation, however, the term *stenosing tenovaginitis* is apparently used interchangeably with *stenosing tendo* or *teno-synovitis.* Therefore, the distinction between the two terms is purely academic, although an attempt to separate the two entities has been made by some authors, such as Griffiths[1] and Robinson.[2]

As has been stated, the disease affects the tendon sheath primarily, and in most instances its synovial lining is involved as well.

This sheath is the fifth anatomic layer of tissue encountered in the region of the radial styloid process. The four layers external to the sheath are the skin, two layers of superficial fascia and the transverse fibers of the dorsal carpal ligament. In the deep layer of the superficial fascia lie the superficial veins and cutaneous nerves (Fig. 1).

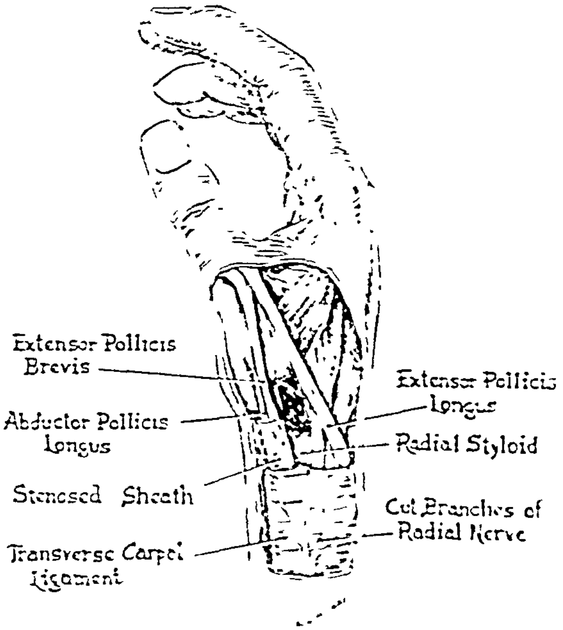

Fig. 1.—Parasagittal section, showing anatomic configuration in region of radial styloid.

folding the remaining digits over it. If ulnar deviation of the hand is then brought about either actively or passively, a sharp, stabbing pain is experienced by the patient over the styloid process of the radius. This

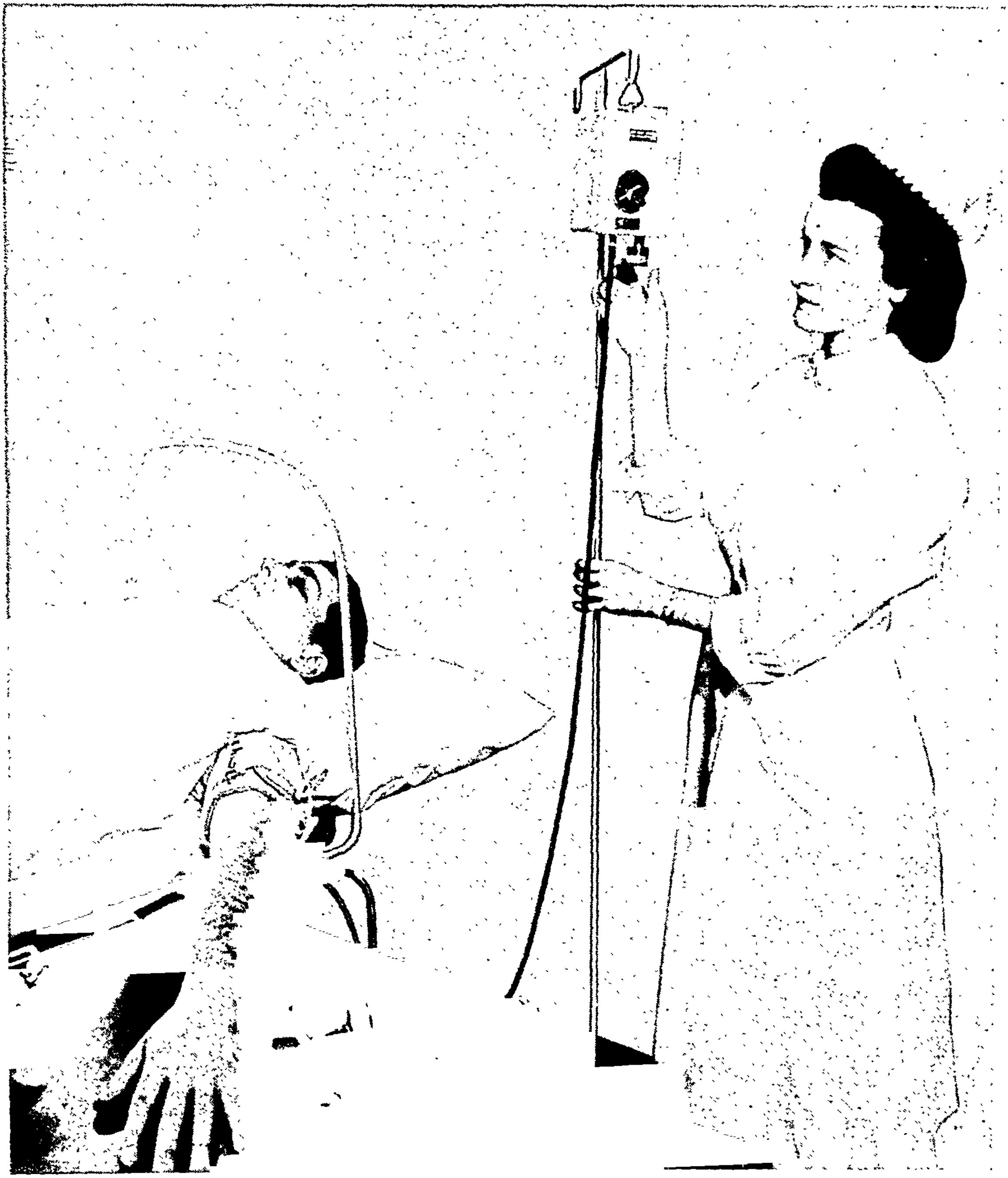

Fig 2.—Kidde-Robbins tourniquet.—This assures complete control of blood flow, an important factor during arm and leg operations. Pressure is regulated by a control knob which can be preset to the desired dial reading (0 to 1,000 mm. Hg.). This desired pressure is maintained absolutely constant until changed by turning the control knob or released by pushing the on-off switch. There is no danger of loss of pressure even if the Freon container is removed or changed during the operation. Freon is nontoxic and noninflammable. One function of this machine is to enable the surgeon to make rapid variations in applied pressure during an operation. Periodically, in long operations, controlled blood flow into tissues, near the operative site, allows for "aeration and nutrition" of tissues, thus giving a better final result.

sheath differs, depending on the duration of the lesion. There is little visible change in the sheaths in patients brought to operations early, except, perhaps, a slight excess of fluid between the sheath and the underlying tendons or a slight thickening of the sheath.

In patients brought to operation late in the course of the disease, a greater variety of pathologic alterations is observed. Both the sheath and the epitendineum for one or both tendons may have changed color—from the normal shining-pearl color to gray or reddish brown. The sheath is fibrosed and thickened in cases of long-standing disease. This fibrosis may lead to an hourglass constriction of the tendons. In some cases the fibrosis extends across the synovial cavity from the sheath to the epitendineum. Areas of fibrocartilaginous change sometimes occur in the sheath,[6] but ossification is rare. There is frequently a great amount of exudate in the synovial cavity, with swelling of the synovial lining.

Three types of degeneration have been observed:

1. Hyaline degeneration in the markedly thickened, dense, fibrous layers of the lateral sheath.
2. Mucoid degeneration in the thick walls of the blood vessels in the loose fibroelastic connective tissue of the sheath.[7]
3. Obliterative degeneration of the synovial lining in many places, with breakthrough of areolar or fibrotic adhesions.

It has been hypothesized that degeneration of the sheath, due to pressure and/or friction, is the first change that takes place in cases of De Quervain's disease; this is followed by exudative and hyperplastic activity, resulting in stenosis of the osteofibrous canal through which the two tendons pass along the styloid process. Of the three types of degeneration mentioned, however, at least the first two would seem to have occurred after previous fibroplasia and increased vascularity.

*De Quervain's Disease: Summary of Cases**

	Patient's Initials	*Age*	*Sex*	*Occupation*	*Duration of Symptoms Prior to Operation*	*Time Since Operation*	*Results*
1.	M. R.	47	F	Switchboard operator	3 yr.	3 yr. 2 mo.	Excellent
2.	K. McG.	42	F	Publisher	2 mo.	3 yr. 11 mo.	Excellent
3.	A. P.	54	F	Religious teacher	7 yr.	5 yr.	Excellent
4.	S. E.	33	M	Loader	6 weeks	6 yr. 9 mo.	Excellent
5.	L. B.	42	F	Sub. Signal Co.	7 mo.	7 yr. 9 mo.	Excellent
6.	M. W.	42	F	Inspector	Indefinite	7 yr. 11 mo.	Excellent
7.	M. S.	57	F	Housewife	6 weeks	8 yr. 9½ mo.	Excellent
8.	N. L.	51	F	Waitress	2 mo.	9 yr.	Excellent
9.	M. P.	32	F	Salesgirl	6 mo.	4 yr. 11 mo.	Excellent
10.	R. C.	32	F	Checker	2 mo.	1 yr. 7 mo.	Excellent
11.	M. C.	64	F	Housewife	2 mo.	6 yr. 2 mo.	Excellent
12.	K. McD.	35	F	Factory worker	9 mo.	9 yr. 1 mo.	Excellent
13.	S. F.	53	F	Religious teacher	1 yr.	3 yr. 10 mo.	Excellent
14.	I. K.	49	F	Nurse	6 mo.	2¼ mo.	Excellent
15.	B. T.	50	F	Housewife	2 mo.	2 yr. 1½ mo.	Excellent
16.	I. G.	31	F	Housewife	4 mo.	2 yr. 9 mo.	Excellent
17.	F. F.	50	F	Housewife	4 mo.	1 yr. ½ mo.	Excellent
18.	M. T.	46	F	Religious teacher	9 weeks	1 yr. 1 mo.	Excellent
19.	Sr. J. I.	50	F	Religious teacher	5 mo.	2 yr. 6 mo.	Excellent
20.	M. F.	56	F	Housewife	6 mo.	10 mo.	Excellent
21.	E. D.	36	F	Monitor	12 weeks	7 yr. 1 mo.	Excellent
22.	R. K.	23	M	Handler	4 mo.	1 yr. 6 mo.	Excellent
23.	I. K.	47	M	Physician	1 mo.	11 mo.	Excellent
24.	M. A.	34	F	Machine operator	2 weeks	1 yr. 6 mo.	Excellent
25.	C. M.	26	M	Auto mechanic	6 mo.	1 yr. 6 mo.	Excellent
26.	E. C.	31	F	Housewife	8 mo.	1 yr.	Excellent
27.	S. C.	42	M	Plumber	18 mo.	9 weeks	Excellent
28.	R. N.	51	F	Machine operator	6 weeks	2 yr.	Excellent
29.	S. W.	27	F	Machine operator	3 weeks	2 yr.	Excellent
30.	F. N.	56	F	Stitcher	9 mo.	1 yr.	Excellent
31.	L. R.	48	M	Riveter	11 mo.	9 mo.	Excellent
32.	N. C.	42	F	Seamstress	19 mo.	9 mo.	Excellent
33.	F. F.	29	M	Laborer	6 weeks	7 weeks	Excellent
34.	W. T.	30	F	Machine operator	3 weeks	2 mo.	Excellent
35.	B. F.	30	F	Painting	5 weeks	2½ mo.	Excellent
36.	T. T.	44	F	Packer	10 mo.	7 mo.	Excellent
37.	O. T.	53	M	Laborer	5 mo.	1½ yr.	Excellent

Summary of Cases (continued)

38.	L. T.	21	F	Salesgirl	2½ yr.	9 mo.	Excellent
39.	W. N.	37	F	Fitter	4 mo.	6 mo.	Excellent
40.	G. B.	33	M	Mechanic	18 mo.	4 mo.	Excellent
41.	D. K.	55	F	Cutter	5 mo.	8 mo.	Excellent
42.	S. C.	54	M	Finisher	1½ yr.	8 mo.	Excellent
43.	H. G.	44	M	Carpenter	7 mo.	1 yr.	Excellent
44.	C. D.	29	F	Cutter	11 mo.	6 mo.	No improvement
45.	M. D.	45	F	Cutter	3 mo.	6 mo.	Excellent
46.	L. D.	45	M	Laborer	3-4 mo.	1 yr. 1 mo.	Excellent
47.	M. J.	41	F	Packer	1 mo.	1 yr. 1 mo.	Excellent
48.	D. D.	17	F	Student	6-7 mo.	3 yr. 2 mos.	Excellent
49.	A. C.	58	F	Housewife	Several mo.	2 yr.	Excellent
50.	M. McI.	29	F	Packer	10 mo.	1 yr. 6 mo.	Excellent
51.	A. B.	42	F	Waitress	7 weeks	1 yr. 6 mo.	Excellent
52.	V. B.	38	M	Truck driver	1 mo.	1 mo.	Excellent
53.	J. H.	40	M	Laborer	1½ yr.	2 yr. 4 mo.	Excellent
54.	A. A.	49	F	Housewife	6 weeks	8 mo.	Excellent
55.	S. MacD.	60	M	Shoe worker	3 yr.	3 yr. 6 mo.	Excellent
56.	E. B.	41	F	Housewife	2 mo.	1 yr. 5 mo.	Excellent
57.	K. A.	43	F	Housewife	6 mo.	2 yr. 4 mo.	Excellent
58.	I. B.	28	F	Housewife	9 mo.	5 mo.	Excellent
59.	M. MacD.	24	M	Factory worker	16 weeks	1 yr.	Excellent
60.	N. P.	30	M	Salesman	2½ mo.	4 yr. 2 mo.	Excellent
61.	M. K.	52	F	Housewife	3½ yr.	3 yr. 6 mo.	Excellent
62.	M. L.	19	F	Clerk-typist	6 weeks	2 yr. 3 mo.	Excellent
63.	A. M.	58	F	Meat worker	3 mo.	5 mo.	Excellent
64.	G. S.	22	M	Delivery man	4 mo.	1 yr. 5 mo.	Excellent
65.	H. S.	60	M	Executive	9 mo.	3 yr. 2 mo.	Excellent
66.	E. M.	[illegible]	F	Decorator	3 mo.	2 yr. 4 mo.	Excellent
67.	C. H.	[illegible]	F	Housewife	5 yr.	2 yr. [illegible]	Excellent
68.	L. E.	48	F	Housewife	4 yr.	10 mo.	Excellent
69.	D. A.	[illegible]	F	Typist	[illegible]	[illegible]	[illegible]
70.	J. C.	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
71.	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]
72.	A. P.	[illegible]	F	Typist	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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4.	S. E.	33	M	Loader	6 weeks	6 yr. 9 mo.	Excellent
5.	L. B.	42	F	Sub. Signal Co.	7 mo.	7 yr. 9 mo.	Excellent
6.	M. W.	42	F	Inspector	Indefinite	7 yr. 11 mo.	Excellent
7.	M. S.	57	F	Housewife	6 weeks	8 yr. 9½ mo.	Excellent
8.	N. L.	51	F	Waitress	2 mo.	9 yr.	Excellent
9.	M. P.	32	F	Salesgirl	6 mo.	4 yr. 11 mo.	Excellent
10.	R. C.	32	F	Checker	2 mo.	1 yr. 7 mo.	Excellent
11.	M. C.	64	F	Housewife	2 mo.	6 yr. 2 mo.	Excellent
12.	K. McD.	35	F	Factory worker	9 mo.	9 yr. 1 mo.	Excellent
13.	S. F.	53	F	Religious teacher	1 yr.	3 yr. 10 mo.	Excellent
14.	I. K.	49	F	Nurse	6 mo.	2¼ mo.	Excellent
15.	B. T.	50	F	Housewife	2 mo.	2 yr. 1½ mo.	Excellent
16.	I. G.	31	F	Housewife	4 mo.	2 yr. 9 mo.	Excellent
17.	F. F.	50	F	Housewife	4 mo.	1 yr. ½ mo.	Excellent
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19.	Sr. J. I.	50	F	Religious teacher	5 mo.	2 yr. 6 mo.	Excellent
20.	M. F.	56	F	Housewife	6 mo.	10 mo.	Excellent
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23.	I. K.	47	M	Physician	1 mo.	11 mo.	Excellent
24.	M. A.	34	F	Machine operator	2 weeks	1 yr. 6 mo.	Excellent
25.	C. M.	26	M	Auto mechanic	6 mo.	1 yr. 6 mo.	Excellent
26.	E. C.	31	F	Housewife	8 mo.	1 yr.	Excellent
27.	S. C.	42	M	Plumber	18 mo.	9 weeks	Excellent
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29.	S. W.	27	F	Machine operator	3 weeks	2 yr.	Excellent
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31.	L. R.	48	M	Riveter	11 mo.	9 mo.	Excellent
32.	N. C.	42	F	Seamstress	19 mo.	9 mo.	Excellent
33.	F. F.	29	M	Laborer	6 weeks	7 weeks	Excellent
34.	W. T.	30	F	Machine operator	3 weeks	2 mo.	Excellent
35.	B. F.	30	F	Painting	5 weeks	2½ mo.	Excellent
36.	T. T.	44	F	Packer	10 mo.	7 mo.	Excellent
37.	O. T.	53	M	Laborer	5 mo.	1½ yr.	Excellent

Summary of Cases (continued)

38.	L. T.	21	F	Salesgirl	2½ yr.	9 mo.	Excellent
39.	W. N.	37	F	Fitter	4 mo.	6 mo.	Excellent
40.	G. B.	33	M	Mechanic	18 mo.	4 mo.	Excellent
41.	D. K.	55	F	Cutter	5 mo.	8 mo.	Excellent
42.	S. C.	54	M	Finisher	1½ yr.	8 mo.	Excellent
43.	H. G.	44	M	Carpenter	7 mo.	1 yr.	Excellent
44.	C. D.	29	F	Cutter	11 mo.	6 mo.	No improvement
45.	M. D.	45	F	Cutter	3 mo.	6 mo.	Excellent
46.	L. D.	45	M	Laborer	3-4 mo.	1 yr. 1 mo.	Excellent
47.	M. J.	41	F	Packer	1 mo.	1 yr. 1 mo.	Excellent
48.	D. D.	17	F	Student	6-7 mo.	3 yr. 2 mos.	Excellent
49.	A. C.	58	F	Housewife	Several mo.	2 yr.	Excellent
50.	M. McI.	29	F	Packer	10 mo.	1 yr. 6 mo.	Excellent
51.	A. B.	42	F	Waitress	7 weeks	1 yr. 6 mo.	Excellent
52.	V. B.	38	M	Truck driver	1 mo.	1 mo.	Excellent
53.	J. H.	40	M	Laborer	1½ yr.	2 yr. 4 mo.	Excellent
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55.	S. MacD.	60	M	Shoe worker	3 yr.	3 yr. 6 mo.	Excellent
56.	E. B.	41	F	Housewife	2 mo.	1 yr. 5 mo.	Excellent
57.	K. A.	43	F	Housewife	6 mo.	2 yr. 4 mo.	Excellent
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59.	M. MacD.	24	M	Factory worker	16 weeks	1 yr.	Excellent
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61.	Mrs. K.	52	F	Housewife	3½ yr.	3 yr. 6 mo.	Excellent
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63.	A. M.	58	F	Meat worker	3 mo.	5 mo.	Excellent
64.	G. S.	52	M	Delivery man	4 mo.	1 yr. 5 mo.	Excellent
65.	H. S.	60	M	Executive	9 mo.	3 yr. 2 mo.	Excellent
66.	E. M.	[illegible]	F	Decorator	3 mo.	2 yr. 4 mo.	Excellent
67.	C. H.	[illegible]	F	Housewife	5 yr.	2 yr. 8 mo.	Excellent
68.	I. R.	48	F	Housewife	4 yr.	10 mo.	[illegible]

Summary of Cases (continued)

77.	C. S.	27	F	Assembly worker	2½ yr.	10 mo.	Excellent
78.	R. K.	45	F	Housewife	8 mo.	1½ yr.	Excellent
79.	H. D.	33	F	Salesgirl	1 yr.	3 mo.	Excellent
80.	M. H.	26	F	Clerk	2 mo.	2½ yr.	Excellent
81.	J. A.	53	F	Housewife	3 yr.	5 mo.	Excellent
82.	M. F.	41	F	Switchboard operator	18 mo.	2 yr. 10 mo.	Excellent
83.	A. N.	35	F	Nurse	5 mo.	1 yr. 1 mo.	Excellent
84.	M. C.	27	F	X-ray assistant	1 mo.	4 yr.	Excellent

*Part of table reproduced by courtesy of *Annals of Surgery* 138:839 (Dec.) 1953.

casting, piano-playing, bricklaying or operating a telephone switchboard.

For some reason, the disease is more than three times as common in women as in men. As was pointed out by Bunnell,[11] the angulation of the tendons of the abductor pollicis longus and the extensor pollicis brevis at the styloid process is definitely greater in women than in men. Another possible factor is that more women are working in factories today than ever before and are being subjected thereby to unusual manual labor. This explanation does not account for the fact that many patients are housewives.

The age incidence is highest between 25 and 65 in the majority of cases reported.

Most authors report that the right and left hands are affected with equal frequency. The lesion is usually unilateral.

Constant trauma is generally accepted as the main predisposing factor. By "constant" is meant either continuous over long periods, or repetitive, with intermittent breaks between short, discrete periods of traumatization. A bricklayer who works eight hours a day might be said to undergo continuous traumatization, while a housewife who darns one pair of socks every three days or so undergoes repetitive traumatization.

Surgical Treatment and Technic.—Surgical intervention is the treatment of choice for De Quervain's disease. Other methods have little lasting effect. Immobilization of the hand is effective only while the hand is splinted. Since the patient cannot use his hand adequately during this period, this procedure cannot be considered a satisfactory cure; it is only a temporary one. If the patient is a wage earner, this state of immobilization is many times more economically damaging than it might be to a housewife.

In spite of the claims of Christie[1] and Wolin[12] as to the efficacy of cortisone, or a derivative thereof, we have observed that this treatment has no lasting effect.

During the surgical procedure, intravenous Pentothal is the anesthetic of choice unless contraindicated. With this anesthetic, tissues are not distorted by local injections of procaine hydrochloride near the site of the lesion. A dry field is obtained by means of a pneumatic type of tourniquet, maintained at 300 mm. of mercury, around the upper part of the arm. An avascularized field aids in location of the main nerve trunk and the three branches of the superficial radial nerve that are present around the styloid.

After the cutaneous surfaces of the extremity have been prepared with ether and Zephiran, the hand and wrist are draped with sterile stockinette. The stockinette is divided longitudinally over the distal end of the radius, and a longitudinal incision about 2 inches (5 cm.) long is made over the styloid through the skin and subcutaneous layers of the superficial fascia, care being taken to avoid nicking the superficial radial nerve and its branches. This nerve supplies sensory fibers to most of the lateral part of the dorsum of the hand.

The transverse fibers of the dorsal-carpal ligament, and then, in turn, the synovial sheath are incised longitudinally. The cut edges of the sheath are excised as much as possible, thus completely baring the involved tendons. "This latter maneuver prevents the possibility of a recurrence and any further disability resulting from a re-adherence of the divided ends of the sheath."[13] Only the skin is sutured on closing, and a firm gauze dressing is then applied, reinforced with an ace bandage. Active motion is instituted on the day after the operation. Skin sutures are removed on the seventh or eighth postoperative day. The average person can resume work on the tenth or twelfth day, although he or she is actually free of pain from the first day.

RÉSUMÉ

RESUMEN

Se presentan una serie de 84 casos de enfermedad de De Quervain: 83 (el 99%) han sido tratados con éxito quirúrgicamente. El tratamiento conservador es inútil ya que se prolonga la enfermedad con la consiguiente pérdida de horas de trabajo. La inyección local de hidrocortisona carecen de valor.

La causa de la enfermedad es desconocida aunque en dos ambientes industriales se la relaciona con el trabajo manual. Este estudio acaba describiendo el tratamiénto quirúrgico de esta enfermedad.

SUMARIO

Apresenta uma serie de 48 casos de De Quervain. Otienta e três (99%) dos pacientes foram tratados cirurgicamente com sucesso. Diz que a terapeutica conservadora é altamente desencorajante porque prolonga a incapacidade e aumenta a perda de horas de trabalho. As injeções de hidrocortisona não tem valor nesta síndrome. No presente a etiologia ainda é desconhecida embora se pense, nos círculos industriais, que o traumatismo está em causa, como produto do trabalho manual. Descreve uma técnica cirúrgica para a molestia de De Quervain.

Die wirkliche Ursache der Krankheit ist unbekannt, wenn auch in industriellen Kreisen allgemein angenommen wird, dass eine Beziehung zu manueller Arbeit besteht.

Die chirurgische Technik zur Behandlung der De Quervainschen Krankheit wird beschrieben.

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When patients who are not febrile complain of headache and noises in the head. vertigo, slowness of speech and numbness of the hands, expect them to become either epileptic or to suffer from apoplexy, or to suffer from loss of memory.

—*Hippocrates*

Otorhinolaryngologic Surgery

Psychologic Factors in Carcinoma of the Head and Neck

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ALL patients suffering from carcinoma are confronted by the distressing specter of treatment, either by operation by or irradiation, that will eliminate or alter an organ of the body, interfere with the body image, impair their general and specific functional capacities and may ultimately terminate in death. For most persons contemplation of these events results in anxieties, depressions and panic of various degrees and duration. The thought of giving up an area of one's body and all that an organ has actually or imaginatively meant, disrupts the living plan that has been evolved during the patient's lifetime. It is this disruption, plus the demand for developing a new adaptive program — with its threats of personal failure and general rejection—that dominates the emotional climate. The *fear of* death, combined with the fear of a worthless life, haunts the patient.

The treatment of carcinoma of the head and neck imposes special functional and esthetic problems. Serious mental and psychic disturbances are possible and should be guarded against by all available means.

The author presents a brief classification of patients with carcinoma of the head and neck, showing clearly that wide variations exist in their basic attitudes toward carcinoma and its treatment. Each patient reflects the specific mores of his own background from infancy on, and it is in the light of these composite influences that the surgeon should inform him about his condition and its treatment. A series of office interviews is described, which, if properly handled, will do much to clarify the situation for the patient. Similar trea-

focus activities that have been carried on, previously, on the reflex and instinctive levels and quite naturally have been taken for granted.

Loss of a tissue area in the head and neck always causes a downgrading of the conception of the body image. The poignancy of this fact is emphasized by the lack of adequate camouflage and concealment possible in this exposed and conspicuous area.

Excisional surgical procedures in the head and neck often contain the paradox of effecting a cure of carcinoma without commensurate gratitude on the part of the patient. This is understandable, since the patient did not desire either the carcinoma or the extirpating operation, and, although the carcinoma was successfully removed, the resultant alterations in function and esthetics are not only a burden but a continuous reminder of this unpleasant experience. Disappointment and rejection often dominate the picture. This stands in sharp contrast to the attitude of the person whose body image conception has been upgraded by the surgical correction of a simple deformity, as a result of the patient's specific desires and hopes.

The patient must have a reason, either real or unreal, for the catastrophe of carcinoma. In order to preserve itself and prevent collapse or disorganization, the mechanism must develop and accept the answer to the questions "What caused this?" and "Why do I have it?" The concept of nihilism is unacceptable to man, and he substitutes his beliefs and speculations in the analysis of his problem. The activity of his analysis increases in proportion to his conception of the seriousness and threat of his disease. The patient, of course, feels obligated to establish his own beliefs and reasons when his physician tells him there is no known cause for his disease.

Even when the physician presents an apparent or obvious etiologic factor, the patient will frequently garnish this with his own beliefs. His own analysis, inaccurate as it may be, has much more meaning for him than textbook deductions. His beliefs develop along the lines of natural or superficial causes. Simple and complicated formulae are developed on the basis of some reality or phantasy about smoking, bad teeth, dental appliances, drinking, excessive eating, undereating, bad working habits, injury, lack of vitamins, gas fumes, wrongdoings, failures, infidelity and anything that might fit into the pattern.

In most instances, these beliefs and analyses are essential and helpful to the patient. They should not be destroyed unless they prove obstructive or harmful.

Classification of Types. — There is no specific classification of human beings and their responses to radical operation for carcinoma in the head and neck. The combinations of multitudes of situations and forces make predictions inaccurate. From a practical point of view, almost anything is possible.

The fundamental responsibility of the physician is a conception of what this type of malignant disease and its treatment mean to the individual patient. To carry this out in its fullest sense is a most challenging proposition, requiring comprehension that the patient's adaptive potential, the domestic climate, the timing and rhythm, the economic status and the technical aspects of the operation are all interrelated.

In a superficial way, certain groups of patients stand out. Those patients who can relate themselves to others, and who are in the habit of so relating themselves in the past in a balanced fashion, possess the best working facility for adaptation. Overrelation, on the other hand, can prove to be a great handicap.

Those who have not achieved human relations in the past, who are not trusting but appear to be independent and self-sufficient, experience great difficulty when the technics and pillars of their adaptations are destroyed by radical surgical treatment, and they are forced into a position in which relatedness is essential. This group contains persons who appear to be unusually casual during the first two interviews, who demand to know everything about their disease, even the depressing aspects, and who state that they "can take it." It also contains those who immediately attempt to rehabilitate themselves without dependency or trust, on the basis of self-mastery. Delayed depressions, psychosomatic syndromes and hypochondriac tendencies are not uncommon in this group.

Patients may also be grouped, in a general way, in respect to their orientation to the medical profession. The person who submits to an annual or biannual examination with the hope that the examinations will reveal him to be normal year after year—and with the secondary hope that if a malignant process should develop it will be detected at an early date and in a curable stage—is better adjusted to medical examinations, tests, reports and advice than is one who does not. In general, these persons understand the developing situation in a more comprehensive way and are more willing to accept proffered advice with less anxiety and confusion. The factors of delay in seeking advice, delay in diagnosis and delay in treatment are minimal in this group.

solve spontaneously within a few weeks or months. The persistence of a minor symptom is not so strong a motivating factor in seeking help as is the progression of the symptom to distortion of the body image, impairment of body function and the advent of pain. On the instinctive level the patient does not desire to learn that he has a serious illness that might threaten his life, and delays treatment by evasive action and subterfuge. This group responds favorably to the insistence of well-meaning relatives and friends that medical advice be sought. Its members fall naturally into the pressures of the medical mores of our time.

A third group, the smallest, is dominated by uncontrollable fear and insecurity germinated by obsessive indulgence and broodings about carcinoma, which are supported by deep psychoneurotic and psychotic patterns. This type of person is compelled to seek out one doctor after another and to insist not only on the high possibility of the disease being present, but on its actual presence in spite of negative indications. Obviously, he needs professional psychiatric help.

It is impossible to establish a fixed set of rules in dealing with the patient in the consulting room. The specialist concerns himself with three areas of activity, all interrelated: namely, establishing the diagnosis, planning the treatment and evaluating the patient's emotional capacity to accept and adjust to this new, severe and threatening situation. All of the aforementioned factors [illegible] hensiveness. The criteria of actual success are not reflected in the published five-year cure rate if successful readjustment and adaptation to the alterations of function and esthetics are absent.

The patient reflects the mores of his specific background in dealing with his carcinoma problem. This is the foundation of many of his broad deductions and adjustments. Specific patterns, fertilized in the domestic scene in infancy and relating to special organs, interlace the adaptive pattern. This background modulates the immediate family, working, sociological and economic areas. It is in the light of these composite forces that the surgeon informs his patient of his disease, its management and its inevitable alterations in the patient's life. There is certainly no rigid formula in these circumstances for emotional evaluation. One must be guided by devotion to the patient's welfare.

The Office Consultation.—Once a patient has decided to seek medical aid and appears in the physician's office for the first time, a sequence of events will develop that will have direct bearing upon the patient-doctor relation. There is no rigid or specific set of rules and regulations that can be applied to all patients. Everything that happens, however, is of extreme importance to the patient.

The first visit should be marked by warmth, friendliness and the assurance that the physician is interested in the patient's problems and welfare. The attitude of the secretary, the atmosphere in the waiting room, the history taking, the physical examination, the reaction to the physician, whether the diagnosis is already known by the patient, whether the patient was referred by another doctor or another patient, unnecessary delays in handling the patient, arranging for diagnostic tests which include roentgen studies, chemical and biologic examinations, etc., the approach to an office biopsy, if one is carried out, and its meaning, and the departure with a specific date to return—all of these determine the atmosphere for the patient's eventual adaptation to his problem.

The patient should feel that the first examination is devoted to investigation, analysis and diagnosis. Having a new patient wait for a long time in a combined waiting room with postoperative patients showing conspicuous esthetic deformities and also with patients who are extremely sick, either treated or untreated, is a shock that is often more than he can endure.

The orientation of the patient to his disease begins with an analysis of the patient himself. Pertinent information may be obtained from several other responsible members of the family group concerning his habits, weaknesses, strengths, hopes, etc. The status in respect to being male, female, the working member, single or leader all have bearing. The moral and religious philosophy, combined with the relation in the family group, is so important that arbitrary action against the patient to compel him to see everything in the light of the surgeon's experience may result in disaster. A patient's way of "seeing things" has more meaning for him than a second or a third person's deductions. When feasible, the patient should understand the essentials of his problem on the basis of his own comprehension and feeling. In every instance, he must be helped to reach this point.

The second visit is a much more complex experience for all concerned. It brings into focus the physician's philosophy with regard to carcinoma and its relation to the patient. It confronts the physician with the request for the amount of information the patient desires to have and his responsibility to estimate how much of this information is absorbable by the patient.

This interview with the patient consists of a review of the reports of the various tests, with emphasis on the positive and undisturbing factors. The physician should attempt to present this material with personal interest and warmth and not to display himself as a threatening, impersonal and hostile agent. In most instances, some discussion of the diagnosis, with an explanation of the disease and its behavior, is helpful. Undue pessimism at this time is distinctly harmful. A discussion of the treatment should encompass what organs are involved, what will be removed, why it is necessary and some of the problems and handicaps this will create. Encouragement should be given concerning the operative technic, and reassurance about the type of anesthesia, as these are often disconcerting factors to the patient.

An explanation of the disease and the facts pertinent to the case, even though this has an immediate depressing effect, will serve to mitigate anxieties as the program progresses. From a moral point of view the patient is entitled to be informed of the facts of his case, and they should not be withheld unless there is clear-cut evidence that knowledge of the truth would be detrimental. The amount of factual information to be imparted is an individual question with each patient. One of the most important facets at this point is the manner in which this information

lenge and passion for mechanical perfection leads to an impersonal type of preoccupation. This is used as a shield against the great humanity and compassion that are natural products of the work. Unfortunately, these life experiences are repressed because of the fear of their reality and strengths. What a miracle might be achieved if this understanding were used to its fullest depth.

A brief discussion of the pertinent factors in the immediate postoperative period, the length of time that it will be necessary to remain in the hospital and the rehabilitation period at home will prepare the patient for the entire experience. Every patient with carcinoma suffers during this interview. Utter anxiety and depression, with fear as their root, assume a dominant role in his pattern of behavior. They may regress, remain stationary or advance into disorganization, psychic turmoil and panic. This is perhaps the most critical time in the relation of the patient with his physician. Proper personal orientation at this juncture will facilitate all of the future adjustments.

A vast majority of patients recover from the original shock of the reality of the illness and proceed with the operation. A small percentage elect to seek another opinion for confirmation and then return for the advised treatment. A few patients search for an answer to their problem by hysterically going from one doctor to come hopeless. Another small group rejects treatment completely in the full knowledge of the prognosis, tragically convinced that they have no significant reason to make a heroic struggle against such a deadly enemy. Their equanimity (aided by alcohol and narcotics) is often inspirational. It is obvious that coercion of this type into a mutilating operation would be severely resented.

The Hospital Experience.—The day of entrance into the hospital is usually associated with increased fear and anxiety. Patients may become tense, excited and hostile. Some feel lost and become panicky. They are not supported by seeing other postoperative patients in a state of marked debility.

Occasionally, however, a patient is relieved by entering the hospital. The conception of this institution as a haven where his problem will be resolved by forces and persons he trusts creates an attitude of confidence and well-being.

Another special event in the sequence of this experience is the day of the operation itself. Fear of death increases, and it is compounded by fear that the operation will be a failure, fear of the anesthetic and fear of complications.

In the immediate postoperative period in the hospital many of the preoperative fears have disappeared but are replaced by fear of the customary postoperative weakness and its threat to rehabilitation, fear that the operation might have proved more serious than was anticipated and fear of the irrevocable alterations in the physiologic functions of the head and neck. There is depression at the early handicaps and attendant inconveniences in this period. There is great anxiety and a strong desire to make rapid progress.

A certain amount of dependence, curiosity and questioning is a normal reaction to these anxieties and fears and should be accepted with the hope that the answers will give reassurance and facilitate the adjustment. Any minor complications in the area of the operation or wound, or of a systemic nature, are met with great anxiety by the patient, usually out of all proportion to their physiologic significance.

The Return Home.—The last step on the program for the patient is convalescence at home. Almost all patients are eager to go home; some, even before their wounds are completely healed. The home situation obviously means more to the patient than the hospital care and security. Contact with the family group under these altered postoperative conditions may become adjusted into a healthy and positive phenomenon for the patient or may prove to be quite depressing. This depends, in the main, upon the emotional status of the family group prior to the operation. If it has been a healthy attitude, it is likely not to change, even though it will undergo considerable strain.

The domestic situation developed over a period of years by personal contact, adaptation and adjustment, whether on the real or on a fantastic level, gives certain meaning and significance to the situations and pressures that confront us. The home has quite naturally become a place of refuge and security, and, in time of external stress, can offer the greatest facility for protection and rehabilitation. The personal relations existing among the various members of the family group constitute the basis of this security. In the final analysis, the climate of the domestic situation may be the deciding factor in the success or failure of a patient to recover from a major operation in the head and neck.

It does, however, have the capacity of exaggerating intrinsic weaknesses and precipitating latent hostility. There is no basis for belief that an operation will cause improvement in a degenerated family situation. On the other hand, there is evidence that an operation will often exaggerate friction, disagreement and maladjustment.

The principal figure in the family group is, quite naturally, the spouse. If there is a mutual feeling of affection, respect, trust, dependence and healthy sexual relations, then the rehabilitative program in the home should progress satisfactorily. The spouse, under these circumstances, will usually participate and be helpful, not only in actual bodily care, if that is necessary, but in the adjustments necessary about the home and in his or her own personal emotional adaptations. The average postoperative head and neck problem does not require extensive or repetitive physical care, and when it is indicated it is usually not repulsive. It is limited to the region of the head and neck and not associated with the sexual organs or the sexual act, which are often dynamic and complicating factors in operations in other regions of the body. Neither is it associated with the alimentary tract, which may have unpalatable implications in the handling of feces and local body care. When it is necessary to perform a gastrostomy on a patient with head and neck problems, the patient usually prefers and is usually capable of managing the care of his body himself.

If the domestic situation has been fraught with preoperative hostilities, antagonisms, a lack of respect and trust, little mutual support or dependence and poor sexual relations, the spouse is usually of no help. The situation frequently becomes overtly destructive and reduces the possibilities of successful adjustment during the rehabilitation program. The variants that can develop cover all types of behavior pattern. Many persons regress to depressed, shameful, quiet secretiveness. Occasionally one will attempt to seek reassurance and security by exaggerated externalization, ostentatiousness and aggressively promiscuous sexual activities. These curious abnormalities are used as foils and excuses for neurotic excesses. This course usually leads to disaster because of the insatiable and devious nature of the emotional demands. Unfortunately, other members of the household may be greatly disturbed during this period.

Recovery and adjustment of a patient in the absence of the family group pattern is often complicated, protracted and incomplete. It rarely attains the success of the "good spouse" situation.

The parent's reaction to the children centers essentially around a desire not to be a burden to them, to limit the depend-fear of separation and fear of the death of the child cause violent emotional tensions, primarily in the mother. If the treatment proves unsuccessful, these experiences leave a variety of permanent emotional scars.

A factor often overlooked by the physician is the coexistence of other serious problems in the family group, possibly affecting another member yet reflecting itself on the patient. These may cover a vast range of living circumstances—financial problems, illnesses of other members of the group, incapacitation of a spouse and the troubles and problems that can affect children. These frequently add a great adaptive burden to the patient's load and must be given consideration in the overall management.

Loss of a Specific Organ.—The loss of a specific organ has the general effect of impressing the patient with a sense of lowered physical vitality. There is no parallel between the function of the organ and the amount of strength and vitality lost.

The loss of organs that have been emphasized in the attempt to attain security and recognition, and have consequently become excessively important in the patient's life, has a much greater debilitating effect than the removal of an organ that was limited to physiologic activity alone. This loss of vitality causes depression and inability to work. It prolongs rehabilitation and may persist indefinitely. It may progress to feelings of worthlessness and hypochondriasis.

The loss of organs concerned with eating and sucking may revive traumas of infancy and childhood, when food was denied on the basis of punishment, ignorance or unavailability. The rehabilitative period may be colored with hostility, aggression, futility and a desire never to speak again.

A review of the various extirpative procedures in the head and neck that affect individual living capacity will give an estimate of the forces. This region of the body contains the special senses upon which man has based a large part of his life. In adaptive importance, it matches the sexual organs and the alimentary system, although the incidence of neurotic depression and guilt is higher with regard to the latter two groups than when the head and neck are concerned.

Ear: The special sense of hearing requires a receptive organ for vibratory sound, giving orientation and emotional significance to the sounds of the world. Not only is man's appreciation and reaction to sound characterized by his depression at losing this sense, but his industry in restoring its efficiency, surgically and with hearing aids, is dependent thereon. He has built a culture and art with the harmonies and rhythms of our civilization. Nevertheless, the threat of loss of hearing in one ear as a result of excisional surgical treatment causes only minimal anxiety and concern. This is largely explained by the fact that the functional capacity and the body image conception are not altered to a significant degree. Rejection, failure and hopelessness do not haunt the patient, and the demands for readjustment are minimal.

As the size of the operation extends to include the auricle, skin and associated bone, the patient's anxiety increases in proportion. When the hearing organ has been destroyed by the tumor, or when the local condition is associated with tinnitus, vertigo, nausea, vomiting and pain, the patient adjusts more readily to the extirpative operation with the combined hope of cure of the tumor and relief of distress. In general, the organ of hearing can be eliminated with less emotional effect than the removal of an eye.

The bilaterality of the hearing apparatus prevents the disaster of deafness in these problems, unless the ear that is not involved with the tumor lacks hearing as a result of a previous, unassociated condition. Guidance and encouragement in the use of a hearing aid and lip reading assist rehabilitation in these special circumstances. The loss of the auricle causes a conspicuous deformity. Its reconstitution by plastic surgery or an artificial prosthesis is often disappointing to the patient. These substitutes rarely match the perfection of the original ear, yet the patient's desire to appear normal compels him to seek them.

Eye: The eye establishes the visual conception of the form, color and texture of the physical world. Its use as a highly receptive organ places it in a special category in man's growth and adjustment. The threat of loss of one eye precipitates a sense of severe depression concerning the ability to adapt, as well as an affront to the body image. Advice to remove a normally functioning eye that is threatened by extrinsic tumor of the sinuses causes greater anxiety than the thought of removing an eye that has been destroyed by tumor and is sightless. The first circumstance is analyzed as elective destruction and the second as essential, in that the eye itself contains the malignant growth and is recognized as useless and dangerous.

tially console the patient for the loss of one eye, but not for the loss of sight. Blindness not associated with carcinoma or the threat to life is accepted by many with magnificent adaptation. Malignant tumors of the orbit in adults are, fortunately, extremely rare. Bilateral exenteration in the absence of favorable prognosis has grave implications.

From a practical point of view, unilateral enucleation does not cause a great functional handicap except in highly specialized occupations for which exact depth perception is required. The resultant esthetic effect is in proportion to the magnitude of the operation. Simple enucleation is not conspicuous when a proper plastic eye can be substituted. Unfortunately, simple enucleation is rarely adequate to cure a high-grade tumor of the orbit and associated sinuses. In these instances, hope of some restitution of the normal esthetic qualities finds justification in reconstructive technics at a later date.

Nose: Smell and taste are receptive senses orienting man to the vapors, odors, perfumes, foods, liquids and compounds with which he makes contact. They combine and overlap in many of his analyses and adaptations. Their action is highly specific, yet the overall effect is a subtle one. Their relation to the instinct of fear of separation and fear of the death of the child cause violent emotional tensions, primarily in the mother. If the treatment proves unsuccessful, these experiences leave a variety of permanent emotional scars.

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The loss of organs that have been emphasized in the attempt to attain security and recognition, and have consequently become excessively important in the patient's life, has a much greater debilitating effect than the removal of an organ that was limited to physiologic activity alone. This loss of vitality causes depression and inability to work. It prolongs rehabilitation and may persist indefinitely. It may progress to feelings of worthlessness and hypochondriasis.

The loss of organs concerned with eating and sucking may revive traumas of infancy and childhood, when food was denied on the basis of punishment, ignorance or unavailability. The rehabilitative period may be colored with hostility, aggression, futility and a desire never to speak again.

A review of the various extirpative procedures in the head and neck that affect individual living capacity will give an estimate of the forces. This region of the body contains the special senses upon which man has based a large part of his life. In adaptive importance, it matches the sexual organs and the alimentary system, although the incidence of neurotic depression and guilt is higher with regard to the latter two groups than when the head and neck are concerned.

Ear: The special sense of hearing requires a receptive organ for vibratory sound, giving orientation and emotional significance to the sounds of the world. Not only is man's appreciation and reaction to sound characterized by his depression at losing this sense, but his industry in restoring its efficiency, surgically and with hearing aids, is dependent thereon. He has built a culture and art with the harmonies and rhythms of our civilization. Nevertheless, the threat of loss of hearing in one ear as a result of excisional surgical treatment causes only minimal anxiety and concern. This is largely explained by the fact that the functional capacity and the body image conception are not altered to a significant degree. Rejection, failure and hopelessness do not haunt the patient, and the demands for readjustment are minimal.

As the size of the operation extends to include the auricle, skin and associated bone, the patient's anxiety increases in proportion. When the hearing organ has been destroyed by the tumor. or when the local condition is associated with tinnitus, vertigo, nausea, vomiting and pain, the patient adjusts more readily to the extirpative operation with the combined hope of cure of the tumor and relief of distress. In general, the organ of hearing can be eliminated with less emotional effect than the removal of an eye.

The bilaterality of the hearing apparatus prevents the disaster of deafness in special senses. Speech is not receptive activity but a projective phenomenon. It is a natural method of communication. It is a productive and creative, rather than analytical, mechanism. It is an instrument that gives the ego meaning. It is so intimately associated with all of man's emotional chemistry that it reflects his deepest feelings in multitudes of voice patterns. The larynx is frequently the organ used in neurotic deviations. The threat of its elimination is a shock that often causes the patient to delay treatment or to seek a type of therapy that does not include this denial.

Partial loss of the larynx, permitting a residuum of a natural voice and a natural airway, is accepted without great tension. Complete sacrifice of this organ precipitates acute anxiety and depression, in that the patient cannot comprehend how he will carry on without a voice box. The emotional pipeline to the outside will be gone. Communication will be relegated to a pad and pencil. The ability to carry out one's previous social and working obligations will be curtailed or eliminated. The specters of failure and uselessness and the difficulty in the adaptive pattern itself are mitigated to some degree by adequate preoperative orientation and, postoperatively, artificial voice mechanisms and esophageal speech.

one side of the face will be paralyzed as part of the treatment of his tumor causes such anxiety that in many instances another and less effective form of therapy is sought, the guarantee that no disfigurement will follow being more acceptable than an improved prognosis. The patient's conception of his postoperative appearance is usually downgraded. The curious and conspicuous character of the deformity devastates self-respect and self-esteem, and this casts its shadow over the social and working existence of the patient. The deformity is also a powerful and constant reminder of the threat to life from the basic disease.

The patient's hope of and insistence on rehabilitation of the face equals the anxiety and depression of the deformity. Nerve grafting, myomectomy, suspension and tranquilization operations give relief to this distress, and as the status of the face improves the force for adaptiveness lessens and self-esteem is enhanced.

Rehabilitation.—The actual rehabilitative program itself contains considerable stress for the patient. It is a period of trial and error with depression and success. The time required for functional rehabilitation is frequently governed more by his emotional adjustment than by his physical handicap. During this interval destroyed by an excisional operation for tumor, the other complements it to such a degree that the patient is often not aware of its deficiency unless specifically tested. Loss of a portion of one of these senses in itself has little effect on the patient's living capacity. The operation requiring the sacrifice, however, is often of such a character that it precipitates the necessity for reevaluation and adjustment.

Oral Cavity: The functions of the oral cavity combine, to some degree, sucking, biting, chewing, swallowing, tasting, breathing and speaking. The structures supporting these functions are fundamental parts of the esthetics of the lower part of the face and neck. Major interference in these areas inflicts upon the patient basic changes that require the development of a completely new living pattern that is inefficient, difficult, limiting and often frustrating. These handicaps depress the patient, threaten his ability to adjust, present him with an undesirable body image and create the possibility that he may fail in his adaptation; or, should he technically succeed, may still be rejected by his family and friends.

The procedures include resections of the mandible, tongue, maxilla, palate, cheek, floor of the mouth, pharynx, larynx, cervical esophagus and lateral neck. In many instances, these technics are combined to form a composite resection of several of these organs in continuity. These extensive surgical maneuvers, understandably, increase the handicap.

The resection of a portion of the mandible eliminates the solidity of the arch and causes an esthetic deficiency at the site of resection. When the loss is at the chin, the deformity is conspicuous. When the loss is on the side, it is less obvious. Any dissolution in the bony arch causes a serious alteration in diet and eating habits. The function of chewing can be restored by bone or inert implantation. The substitution of an oral prosthesis for the mandible is helpful but hardly permits the patient to escape a diet of mush and soft foods.

Resection of a small portion of the tongue causes little disturbance. When a hemiglossectomy is performed, however, *usually in continuity with operation on* the floor of the mouth, the mandible and the lateral aspect of the neck, a significant readjustment is necessary in eating, speaking and swallowing habits and in acceptance of the new body image. Total glossectomy with preservation of the larynx creates a critical functional adaptive problem in speech and particularly in swallowing. An intraoral prosthesis is of slight assistance. Plastic surgical treatment is often delayed because of its multi-staged, prolonged character, the extent of the primary resection and the poor overall prognosis in these advanced cases. Esthetic camouflage by growing a beard increases conspicuousness in an already weakened emotional structure. The adjustment requires months and months of trial and error. It involves not only the patient, to a profound degree, but other members of the family group. As the vast majority of oral carcinomas occur in men in the fifth and sixth decades of life, it is usually the wife who shares the burden with her husband.

In the severest cases the adaptive and physical-self problems are never completely resolved, yet man's capacity to survive without a tongue or a jaw bone or a voice box is more than comforting to the surgeon. The failures that survive their disease, and these are not numerous, are no more a condemnation of adequate surgical treatment than they are of man's psyche.

Larynx: In many respects, the loss of the ability to speak presents the patient with unique problems which are different from those encountered in the loss of the

serios disturbios mentais e psiquicos que devem ser prevenidos por todos os meios possiveis. O A. apresenta *uma classificação* dos pacientes demonstrando a ampla variaçao em face do carcinoma e seu tratamento. Cada um apresenta reflexos de suas atitudes e comportamento na idade infantil pelo que e necessario situar bem o que vai suceder apos o tratamento cirurgico. Descreve uma serie de entrevistas feitas e demonstra os bons resultados quando o doente é convenientemente esclarecido, o que tambem pode ocorrer durante a hospitalização e a convalescença em casa. Discute as dificuldades resultantes da extirpação de um orgão e os metodos de rehabilitação. Considera extremamente importantes a compreensão, orientação e encorajamento, auxilio familiar em torno do paciente.

RÉSUMÉ

malade selon cette méthode également durant le temps de son hospitalisation, puis durant sa convalescence à la *maison*. Les difficultés inhérentes à la perte d'un organe spécifique sont discutées, de même que le processus de réhabilitation qui comporte en lui-même un stress considérable pour le patient. Une surveillance compréhensive et les encouragements du médecins ainsi que l'aide et la collaboration de la famille du malade ont une très grande importance.

ZUSAMMENFASSUNG

Die Behandlung des Krebses am Kopf und am Hals bringt besondere Probleme *funktioneller und ästhetischer* Art mit sich, da der Gewebsverlust in diesen Gegenden unweigerlich zu einer Beeintrachtigung des Aussehens führt. Auch wenn der Krebs erfolgreich entfernt ist, kann es

for extirpation of the disease. The patient and the family group may be shocked by the severity of the alterations and then gradually accept these changes as the rehabilitative program progresses. Alterations in eating habits, the variety and consistency of foods, the problem of constant drooling, uncontrollable and explosive coughing, feelings of rejection, loss of self-respect, revulsion, mutilation and severe depression, whether due to real or to irrational deductions, are nevertheless problems that have to be met and solved.

Rehabilitation is attained by understanding, persistent work and the gradual evolution of attainment and adaptation that are acceptable to the patient and his friends. This attainment does not come about quickly. It is built on the basis of trial and error and success and failure over a period of weeks, months or years. In presenting this knowledge to the patient it is wise to have him build his hopes about an immediate target that is realistic and will prove that he is moving toward a functional capacity that in many respects resembles his preoperative living status. This program should be augmented by an overall goal of higher proficiency and attainment that will give the patient reason to believe that his eventual plight will not be unendurable to himself and unacceptable to others.

This program involves the leadership and encouragement of the patient's surgeon, the help and understanding of the family group, the aid of technical equipment and the encouragement of seeing other people who have worked out the same problems satisfactorily. Psychiatric assistance is essential in special circumstances. If such a patient is left to his own devices, only in a small percentage of cases will he make successful adaptive efforts. The majority will either fail completely or attain levels far below their potential. Living out the results of a successful operation under these conditions is frustrating to the patient and should be unacceptable to the surgeon.

RESUMEN

El tratamiento de los carcinomas de la cabeza o del cuello plantéa problemas especiales estéticos y funcionales ya que toda pérdida de sustancia en estas regiones compromete la normalidad de la figura corporal. Aun cuando un carcinoma sea extirpado satisfactoriamente pueden quedar alteraciones psiquicas o mentales contra las que es preciso precaverse.

El autor presenta una sencilla clasificación de enfermos con carcinoma de la cabeza o del cuello mostrando la diferente actitud que en cada caso debe tomarse ante el problema terapeútico. El enfermo adolece siempre de temores o prejuicios existentes desde su infancia, y es a la luz de tales influencias que el cirujano debe determinar la conducta a seguir. Se precisan con frecuencia muchas conversaciones con el enfermo en la sala de consulta para aclarar bién su estado psicológico y poder así ganar su confianza. También se debe persistir en esta actitud durante la hospitalización y en el tiempo de la convalecencia. Se discuten las dificultades inherentes en las pérdicas de cada parte de cuello o cabez, así como la importancia del stress en el postoperatorio. Son pués en extremo importantes tanto el conocimiento de causa, el dominio de la situación y el mantener el añimo del enfermo de parte del cirujano como la ayuda y cooperación por parte de la familia.

SUMARIO

O tratamento do carcinoma da cabeça e do pescoço suscita problemas de ordem funcional e estetica pela deformidade decorrente das perdas de substancia. Mesmo quando corretamente extirpado aurgem

Proctologic Surgery

Antibiotics in the Preoperative Preparation of the Colon: Evaluation of the Present Status

ROBERT TURELL, B.S., M.D., F.A.C.S.
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AT the time of writing, presurgical preparation of the colon with chemotherapeutic or antibiotic agents for colonic and major rectal operations has become almost a universally accepted practice. This is done with a view to preventing bacterial contamination at the time of operation and the avoidance of postsurgical infectious complications. The history of colonic surgery is that of a ceaseless contest against infection. Infection is not only an accompaniment of grossly infected lesions, such as necrotic neoplasms, diverticulitis and so forth, but may accompany any neoplastic lesion of the large intestine, and often does, as evidenced by the frequent concomitant presence of cellulitis in and about the lesion, as well as nonmalignant lymphadenitis. At this point it should be stressed that there is no need for sterilization of the colon prior to the performance of a simple anorectal operation.

The authors assess the present value of some antibiotic agents currently employed in so-called preoperative sterilization of the colon. The one-day or two-day preparation utilizing a sparsely absorbable and readily absorbable antibiotic is highly effective. The benefit derived from antibiotics should be balanced against the potential reactions or risks. The advisability of the use of physiologic solution of sodium chloride instead of tap water for bowel irrigation to prevent water intoxication and the avoidance of excessive purgation to prevent undue loss of potassium, which may be responsible for postoperative hypokalemia, are discussed. It appears that the two features last mentioned have not, up to the time of writing, been

bestimmten Organs einhergehenden Schwierigkeiten und das Verfahren der Wiederherstellung, das grosse Anforderungen an den Patienten stellt, werden erörtert. Verständnis, Führerschaft und Ermutigung seitens des Chirurgen und Hilfsbereitschaft seitens der Familie des Kranken sind von äusserster Wichtigkeit.

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At the time of writing, presurgical preparation of the colon with chemotherapeutic or antibiotic agents for colonic and major rectal operations has become almost a universally accepted practice. This is done with a view to preventing bacterial contamination at the time of operation and the avoidance of postsurgical infectious complications. The history of colonic surgery is that of a ceaseless contest against infection. Infection is not only an accompaniment of grossly infected lesions, such as necrotic neoplasms, diverticulitis and so forth, but may accompany any neoplastic lesion of the large intestine, and often does, as evidenced by the frequent concomitant presence of cellulitis in and about the lesion, as well as nonmalignant lymphadenitis. At this point it should be stressed that there is no need for sterilization of the colon prior to the performance of a simple anorectal operation.

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caused by interference with the blood supply (ischemic necrosis) of the bowel that has been incompletely protected by antibiotics, rather than by faulty technics and technical errors of anastomosis. Absolute clinical proof of this theory is at present difficult, if not impossible, to obtain.

In spite of the accomplishments hitherto described, preoperative preparation of the colon is but an adjunct to colonic and major rectal operations, and decidedly not a substitute for sound surgical principles, refinements of technic, or good anesthesia. Nor does preparation of the bowel take the place of correction of dehydration, anemia, hypoproteinemia, avitaminosis or other deficiencies.

Antibiotic Agents.—The antibiotics at present available are: (1) penicillin (1929); (2) streptomycin (1944) and dihydrostreptomycin; (3) bacitracin (1945); (4) chloramphenicol (1947); (5) polymyxins (A in 1947 and B in 1949); (6) chlortetracycline (1948); (7) neomycin (1949); (8) oxytetracycline (1950); (9) erythromycin (1952); (10) tetracycline (1952); (11) carbomycin (1952); (12) oleandomycin (1954); (13) novobiocin (1955), and (14) soframycin (1956). A host of others are in the experimental phase, some of which are destined to become clinically available before publication of this paper, e.g., Kanamycin.

is prescribed for several days before operation; the patients' cooperation is elicited by telling them what foods to reject. The prompt cleansing of the colon of masses of bacteria and undigested food containing bacteria is accomplished by means of catharsis and irrigations. Of the cathartics, either castor oil, compound of licorice powder (senna) or a solution of sodium biphosphate and sodium phosphate is employed once, prior to the administration of antibiotics. More recently, a combination of gylcosides of cascara sagrada (Peristim) with dioctyl sodium sulfosuccinate (Pericolace) in doses of 30 to 90 mg. of the former and 100 to 300 mg. of the latter, has been given a clinical trial, with satisfactory results. This is used in order to produce greater liquefaction of the feces. This is followed by irrigations, normal physiologic solution of sodium chloride being used in place of tap water in order to avoid possible water intoxication. These are usually administered daily for one to two days before the scheduled time of operation. Recently, flushing enemas containing 5 to 10 cc. of 1 to 5 per cent dioctyl sodium sulfosuccinate for each 500 cubic centimeters of enema fluid have also been successfully tried. Although mechanical cleansing of the colon is of prime importance, intensive irrigations are avoided in order to prevent that Staphylococcus aureus is frequently also present in the colons of normal persons. Failure to identify this organism oftener is usually ascribed to the use of inadequate media and incomplete culture methods. Some workers ascribe this failure to the presence of staphylococci within the mucosa and not on the surface. E. coli is said to have the ability to migrate through an intact colonic wall; the streptococcus may also do so on rare occasions. The virulence and the number of normally present bacteria may be increased in the bowel that is the seat of localized or diffuse disease, owing to loss of local tissue resistance (locus minoris resistentiae). On occasion, the normal colonic flora may be replaced by an overgrowth of pure cultures of potentially harmful bacteria such as Proteus, Pseudomonas, Candida, and Micrococcus pyogenes var. aureus (Staphylococcus). Although surface overgrowth of yeast or monilia (Candida albicans) is quite common, true clinical moniliasis of the bowel is rare. The significance of staphylococci is discussed elsewhere in the text.

At present, complete sterilization of the colon is neither possible nor desirable, nor is it easy to recolonize the bowel by the normal antetreatment, harmless bacterial flora. The history of the development and the employment of sulfonamides as an adjunct to colonic surgery has been discussed elsewhere.[2, 3] In brief, the sparsely soluble sulfonamides (succinylsulfathiazole, phthalylsulfathiazole or phthalysulfacetemide), when used alone, hardly have a place in the present surgical armamentarium, partly because they are only bacteriostatic—in contradistinction to the antibiotics, which are bactericidal. After their introduction into clinical surgery, however, multiple-stage resections of the colon began to be abandoned in favor of the one-stage operation with primary anastomosis. The closed technic of anastomosis began to give way to the open types, which permit better hemostasis and more accurate approximation of the stomas. The incidence of wound infection and peritonitis was lowered, so that the necessity for preoperative immunization of the peritoneal cavity became obsolete. The beneficial effect of these drugs has, in the near past, been compared to that of iodine in the surgical treatment of thyrotoxicosis. These beginnings have been greatly enhanced by the introduction of antibiotic therapy.

Whatever disagreements that may still exist are largely the product of the lack of adequate-sized competent clinical studies, *because it is difficult to set up controlled* experiments with human beings. Clinically, major difficulties are encountered in securing parallel series of treated and untreated patients and a critical evaluation of comparative and contrasting results. On the other hand, animal experimentation has been quite clear cut. Cohn's studies[3] showed that, in the dog, intraluminally placed antibiotics protect the intestinal limbs as well as the end-to-end anastomosis, even after the devascularization of some 7 cm. of one of the limbs: whereas, in the control dogs, the devascularized segment of the colon is the seat of sloughs, perforations and consequent leaks of fecal material into the peritoneum with fatal peritonitis, the anastomotic suture line remaining intact. In the experimental dog, it is apparent that the fatal intestinal leaks are due to the uncontrolled action of the intestional organisms upon the devascularized segment of colon and not to a fault or error in the technic of anastomosis. Although it is dangerous to translate results obtained in the experimental animal into human medicine or human biology, it may nevertheless be reasonably assumed that, in some cases, sloughs in the intestinal limbs or even disruption of the anastomosis with peritonitis may be to those of neomycin.[9] It is not absorbed after the oral administration. Intraluminally, it has a pronounced antimicrobial spectrum against gram-negative organisms. The effective dose is 2 Gm. (half the dose of neomycin) in four divided doses, administered orally one day before the scheduled time of operation.

COMMENT

As has been stated, fecal bacteriologic studies are carried out whenever practical or feasible, before antibiotic preparation is begun. In the past, swabs from the intestinal mucosa were obtained for gram-stained smears, cultural studies and sensitivity tests at the time of operation. Recently this practice was abandoned because, as a result of the shortening of the period of antibiotic presurgical preparation, it is unnecessary. Postoperatively, gram-stained fecal smears may be made every forty-eight hours. Usually, the detection of clumps of gram-positive cocci suggests the presence of staphylococci and invariably calls for fecal cultures and sensitivity tests of the offending organism to the currently used antibiotics, and, as a general policy, specific therapy, as outlined elsewhere in the text (see Complications), is also invariably instituted at this time.

the patient's large intestine by anteoperation colonic flora, is in the process of assessment.[10] We have not yet had an opportunity to utilize living lyophilized E. coli (Colifer—a proprietary preparation) which was administered in doses of 10 to 15 cc. in tepid water (100 to 250 cc.) as a retention enema or through a proximal vent, if one is present.[11] The same doses may be administered orally if the patient is able to drink. As has been mentioned, the problem of rapid recolonization of the patient's colon after so-called temporary sterilization of the large intestine by the normal preoperative intestinal flora is yet to be solved.

Cohn's ingenious suggestion of introducing into the lumen of the colon a plastic tube, the tip of which lies near the anastomosis, for the easy intraluminal administration of antibiotics during the immediate postoperative period (when medication cannot be taken orally) appears to offer an ideal way of injecting bacitracin or other agents intraluminally which would not interfere with the return of the coliform group of organisms that neomycin suppresses so effectively. At the time of writing, however, we have not yet utilized this procedure.

preparation varies from about five to seven days.

Antibiotics: 1. Penicillin and Dihydrostreptomycin. Patients who cannot swallow either capsules or tablets, are given, parenterally, 400,000 units of penicillin and 0.5 Gm. of dihydrostreptomycin every twelve hours for two days before the operation. This dose is also administered on the day of operation and daily thereafter for a variable period, with a view to providing a generalized antibiotic cover. Thus far we have not observed the occurrence of staphylococcic enteritis following the use of this combination of antibiotics; this is in agreement with Dearing's experience.[5] This is seldom utilized nowadays.

2. *Tetracycline with Neomycin.* Initially,[2b] 1 Gm. of neomycin and 0.25 Gm. of one of the tetracyclines were administered orally every hour for four doses during the first day, and 1.5 Gm. of neomycin and 0.25 Gm. of tetracycline were given on the second day at 8 a.m., 12 noon, 5 p.m., and 9 p.m. Operation was performed in the morning of the third day.[2b] More recently, this schedule has been shortened by giving neomycin, 1 Gm., with tetracycline, 0.5 to 0.75 Gm., every six hours for one day prior to operation. This revised schedule has been effective and has further reduced the preoperative period of preparation of the intestine.

These combinations of antibiotics are effective against (1) the intraluminal bacterial aerobic population (E. coli, Aerobacter aerogenes, Streptococcus foecalis, Proteus, Pseudomonas); (2) anaerobic bacteria (Clostridia and Bacterioides); (3) preoperative cellulitis and/or infection in and about the lesion. They also give protection to the anastomotic limbs in the event of inadvertent or unsuspected compromise to the blood supply and afford a measure of antibiotic systemic protection.

3. *Erythromycin with Neomycin.* This combination, administered in doses of 1 Gm. of neomycin and 0.5 Gm. of erythromycin every six hours, is an effective suppressant of the coliform flora as well as staphylococci and streptococci. The anaerobic and spore-bearing bacterial populations are greatly reduced. The vast yeast counts increase, however, as happens when neomycin is used alone. This mixture produces an adequate preparation of the colon within twenty-four hours. Carbomycin, administered in the same dosage, is almost as effective as erythromycin. In the near past, however, these antibiotics were utilized sparingly because they were kept in reserve to counter infection caused by other antibiotic-resistant strains of Staph. aureus.[2b] Now, with the advent of oleandomycin, a new potent antibiotic against staphylococci, the neomycin-erythromycin combination is employed more frequently. At present, oleandomycin is held in reserve for possible need against staphylococci that are resistant to other available antibiotics.

4. *Oleandomycin with Neomycin.* The combination of oleandomycin and neomycin, administered in a total dose of 2 Gm. of each antibiotic for one day, is comparable in its inhibiting effect on the intestinal microbial flora to the erythromycin-neomycin combination.[6] Similar, but somewhat less effective, is the combination of novobiocin with neomycin.[7]

5. *Chlorquinaldol with Neomycin.* The chlorquinaldol-neomycin combination has also proved to be satisfactory for presurgical preparation of the large intestine; chlorquinaldol alone is useless.[8]

6. *Ristocetin with Neomycin.* This combination is in the process of evaluation.

7. *Mycostatin with Neomycin.* The value of this combination has been favorably commented on by others. Its value has been questioned.

8. *Soframycin.* This new antibiotic, isolated from the Streptomyces lavendulae of Decaris, has properties somewhat similar

have encountered only 1 probable case of moniliasis or candidiasis of the colon.

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Complete: In cases of complete colonic obstruction a proximal decompressive vent (cecostomy or colostomy) is established at the earliest possible moment. For this procedure the patient is antibiotically protected by the intramuscular administration of penicillin and dihydrostreptomycin or the intravenous administration of tetracycline. Preparation of the bowel in advance of definitive surgical elimination of the obstructing lesion is the same as that for the patient with incomplete colonic obstruction.

Patients with strangulating mechanical obstruction (e.g., volvulus) or either traumatic or spontaneous perforation of the colon are accorded prompt surgical intervention combined with intravenously administered tetracycline, plus the flushing of the intraperitoneal cavity and the intestines with physiologic solution of sodium chloride or with 0.5 to 1 per cent of neomycin solution to which bacitracin (250 units per cubic centimeter) may be added.[10] The use of neomycin intraperitoneally, however, carries a significant risk, because it may produce respiratory arrest and renal failure, among other complications. Hitherto this complication has received scant attention.[12] Clorpactin (WCS 90, a brand of monoxychlorosene) may prove more effective than neomycin for unprepared quick cleansing or sterilization of the bowel[13] and is, furthermore, nontoxic.

Complications.—In general, the good derived from the therapeutic employment of antibiotics should always be balanced against the potential reactions or risks. Although all potent antibiotic agents may produce toxic and/or allergic reactions in some persons, the clinician should not overlook his responsibility for initiating symptoms that are far removed from his initial objective. This cannot be too strongly emphasized in current medical thinking. The following complications, though in a sense they are some of the diseases doctors have given to patients (Brooke), are also some of the risk or price the patients must assume for the good the antibiotic agents afford. No benefit has ever come from therapeutic "paralysis" or nihilism. Although the intelligent clinician is neither influenced nor deterred by the possible complications when indications for antibiotic therapy are valid,[14] he should nevertheless be forewarned of the possible risks or reactions.

The surgeon must be able to look at several seemingly unrelated problems at one and the same time. Allusion has already been made (1) to the use of physiologic solution of sodium chloride instead of tap water for irrigation, in order to prevent possible water intoxication; (2) to the avoidance of excessive purgation to prevent an undue loss of potassium, and (3) to the attempts at quick preparation of the colon with antibiotics to escape the overgrowth by harmful bacteria and fungi after elimination of the normal coliform flora. Brooke[15] advised against the particular use of chloramphenicol and chlortetracycline. Unless specially indicated, as in cases of typhoid fever, chloromycetin should also be avoided for other reasons. It is a nitrophenol compound capable of causing granulocytopenia, agranulocytosis and fatal aplastic anemia. The myelotoxicity attributed to its nitrobenzene radical may be extremely serious. As has been stated, the overgrowth of Proteus vulgaris, Pseudomonas aeruginosa and fungi (Candida albicans) may occur, but we have yet to encounter a clinical case of disease of any importance caused by these organisms. This is true particularly of fungi, as we

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To recapitulate: The crux to this situation lies in a high index of suspicion; early recognition of already established complications; prompt identification of the causative organism by smear (gram stain) and culture of the fecal organisms on media that will grow staphylococci; determination of the sensitivity of the offending organism to the prevailing antibiotics, and the institution of prompt specific and supportive treatment. To the clinically ill patient, if the smear reveals micrococci, erythromycin or, preferably, oleandomycin should be administered promptly and in large doses (parenterally, if desired) before the results of cultural studies and sensitivity tests are reported. If organisms are absent on gram-stained smears, more effective therapy, including corticotropin (ACTH) or adrenocortical hormones administered intravenously, and the replacement of depleted electrolyte elements and depleted circulatory fluid volume should be instituted. Fluids should be given in abundance, because they may be lost in the excreted feces, into the tissues and into the lumen of the bowel,[15] where enormous quantities may be trapped. For the critically ill patient with shock or circulatory collapse, oliguria, copious diarrhea, etc., the use of whole blood and vasopressor drugs is justified, in addition to the aforementioned therapy.

Addendum: Since the preparation of this paper, Kanamycin sulfate has become commercially available. Since its pharmacologic properties, toxicity and therapeutic activity seem to parallel those of Neomycin, its usefulness in clinical medicine and surgery will most probably also be similar to that of Neomycin.[17]

The use of fecal enemas in the treatment of pseudomembranous enterocolitis has been suggested (Eiseman, B; Silen, W.; Bascom, G. S., and Kauvar, A. J., Surgery 4:854 [Nov.] 1958).

ZUSAMMENFASSUNG

Der heute gültige Wert einiger der zur sogenannten präoperativen Sterilisierung des Dickdarms angewandten Antibiotika wird abgeschätzt. Die ein- oder zweitägige Vorbereitung des Patienten, die sich der Kombination eines spärlich absorbierbaren mit einem absorbierbaren Antibiotikum bedient, ist höchst wirksam. Die Anwendung dieser kurzfristigen Vorbereitung bezweckt eine Umgehung der Wirkungen einer möglichen Wucherung der Hefepilze, auf die im einzelnen eingegangen wird. Es wird darauf hingewiesen, dass es notwendig ist, die günstigen Wirkungen der Antibiotika gegen die möglichen Reaktionen und Gefahren abzuwägen. Die Ratsamkeit der Anwendung physiologischer Kochsalzlösung statt Wasser zur Darmspülung, um eine Wasserintoxikation zu verhüten, und die Vermeidung übermässigen Abführens, um einem unerwünschten Kaliumverlust, der zur

postoperativen Kaliumarmut im Blut führen kann, vorzubeugen, werden erörtert. Den beiden letztgenannten Faktoren ist offenbar bis zur Zeit der Niederschrift dieser Arbeit nicht genügend Aufmerksamkeit bei der Vorbereitung des Dickdarms zur Operation gewidmet worden. Das Problem der raschen Wiederansiedlung der normalen Darmflora im Dickdarm nach der sogenannten temporären Sterilisierung ist noch ungelöst.

RIASSUNTO

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Queste due ultimi punti non hanno ancora ricevuto la dovuta attenzione. Resta ancora insoluto il problema della ricolonizzazione batterica del colon dopo la sterilizzazione

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RESUMEN

Está suficientemente demostrado el valor que hoy día tienen los antibióticos en la esterilización preoperatoria del colon. La preparación durante un par de dias con un antibiótico de poca absorción y otro facilmente absorbible es francamente efectiva. Pero esta preparación demasiado rápida puede no llegar a evitar el desarrollo del estafilococo p.aureus; esta circunstancia se estudia con algún detalle en este trabajo. En consecuencia los beneficios derivados del empleo de los antibióticos deben ser enfrentados a sus riesgos e inconvenientes. Se estudia también el uso de enemas con solución de cloruro sódico que al evitar una purgación excesiva previene la indebida pérdida de potasio que podría conducir a la hipokalemia postoperatoria. Parece ser que estos dos puntos últimamente mencionados no han sido hasta la fecha considerados como se merecen. Además todavía queda sin resolver el problema de la reconciliación después de la esterilización temporal del colon.

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Specifically speaking. there is a possibility that disease is rooted in the physical aspect of man and . . . is part of the vulnerability and perishability of physical existence . . . In this light, human disease appears as a natural step of man on his way to death. On the other hand. disease can also be looked upon as the result of man's freedom, the fruit of his neglects and inhibitions. his follies and excesses—in other words, the result of his individual biography. In this light disease appears as the shadow, perhaps even the price. of the personality of man. the necessary evil of the fact that man is an individual.

—*Buchner*

Editorial

Early French Surgery

G. KASTEN TALLMADGE, A.M., M.D., Ph.D.*
MILWAUKEE, WISCONSIN

SURGERY in the land known to the Romans as *Gallia* has beginnings in prehistoric times. Broken heads have been found in burials of the Stone Ages, but factual evidence of therapeutic trephination cannot be deduced from these. However, hand-prints in red upon the walls of caves in southern France and northern Spain show frequent missing fingers (Fig. 1). So many of the prints show evidence of these missing fingers that it is more reasonable to assume that the fingers were amputated, probably ritually, than that they were lost by accident or in fights. The amputations appear to have been made at the joints, and presume some knowledge of the art of hemostasis. Of course, written history of such amputations does not exist.

people could not write, neither could th
read, and the ability to read Latin, to s
nothing of Greek, was confined to a few
the more alert spirits in the monasteri

During the forthcoming months of 1959 and as long thereafter as possible, the editorial pages of the Journal of the International College of Surgeons *will be occupied by presentations of rare and extraordinary historic value, the lectures presented at the International Surgeons' Hall of Fame on medical and surgical history from the earliest recorded achievements to those of our own times. We believe that* Journal *readers who were not able to attend th*

Many of the ancient manuscripts extant were copied by scribes in these monasteries, and many of these scribes, as paleographers know well, were merely copying hieroglyphics whose significance was unknown to them.

The preservation of the learning of the classical world, thus, was almost entirely the work of the monastics. St. Benedict had founded the monastery on Monte Cassino in 529, and the Constitution of the Benedictines stated expressly that the care of the sick should come before and above all else. This admonition was equivocal: did it refer to the care of sick Benedictines, or of sick men—and women—whomever they might be?

In any event, among the literate monks there were those who found medicine and surgery alluring fields for study. And there must have been. The Church had a motto, *Ecclesia abhorret à sanguine (the Church abhors bloodshed)*, and this was supposed by some churchmen to cover also the practice of medicine, with its therapeutic bleeding, and the practice of surgery. The increasing devotion of some of the monks to medicine and to surgery led to a significant change in the Church's attitude toward the Benedictine admonition that the care of the sick should come before and above all else. The Church made it more and more clear that th
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It must be supposed that all of the clergy did not feel themselves entirely bound by this decree, or that obedience to it fell into disuse, for, some two and a half centuries later, the Council of Clermont reopened the issue by deploring the neglect of souls by the clergy. The following year, 1131, the Council of Rheims forbade to the monks and the regular clergy the practice of medicine or surgery *for money*. In 1139 the words, *for money*, were deleted from the edict. In 1162 the study of medicine again was forbidden to the religious. Other and stronger pronouncements followed, until, in 1212, the Council of Paris laid the sentence of excommunication upon those who, for the purpose of practicing medicine (or law), remained away from the monastery for more than two months.

Evidently abuses were real, and the Church was finding it most difficult to prevent the monks and the regular clergy from practicing medicine and surgery. The Church held that its members' first duties were toward the religious life. Activity in medicine and law beyond the cloisters led to mundanity in the lives of those whose lives ought to have been dedicated to things supernal. Monks whose knowledge of medicine and whose skill in surgery were famous were called away to
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The requirement of celibacy in a member of the Faculty was not relaxed until 1452. In a student it was not relaxed until 1600.

The Church had endowed the Faculty of Medicine of Paris—and, indeed, the entire University — with exceptional rights, privileges, and immunities. Thus the Faculty of Medicine of Paris, jealously guarding these rights, privileges, and immunities, became extremely proud and acutely aware of its own importance. Indeed, it dictated the entire teaching and practice of medicine in France, and nearly in Europe.

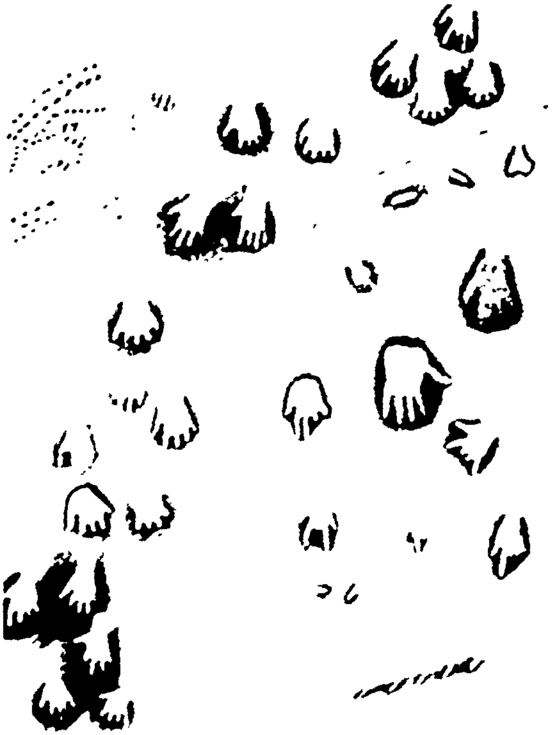

Fig. 1.—Handprints from the walls of the Garga-
Cave in the French Pyrenees; Aurignacian period

Many of the ancient manuscripts extant were copied by scribes in these monasteries, and many of these scribes, as paleographers know well, were merely copying hieroglyphics whose significance was unknown to them.

The preservation of the learning of the classical world, thus, was almost entirely the work of the monastics. St. Benedict had founded the monastery on Monte Cassino in 529, and the Constitution of the Benedictines stated expressly that the care of the sick should come before and above all else. This admonition was equivocal: did it refer to the care of sick Benedictines, or of sick men—and women—whomever they might be?

In any event, among the literate monks there were those who found medicine and surgery alluring fields for study. And there must have been. The Church had a motto, *Ecclesia abhorret à sanguine (the Church abhors bloodshed),* and this was supposed by some churchmen to cover also the practice of medicine, with its therapeutic bleeding, and the practice of surgery. The increasing devotion of some of the monks to medicine and to surgery led to a significant change in the Church's attitude toward the Benedictine admonition that the care of the sick should come before and above all else. The Church made it more and more clear that the first duties of its members were to the religious life, to the care of the soul and not to the care of the body. In some quarters this notion was carried to the point at which disease and injury were looked upon as retribution for sin, and to attempt to alleviate them was considered a trespass upon the just judgment of God.

And so, in 877, the Synod of Ratisbon decreed that the clergy should not study medicine (law was included, but that is outside our present purpose). The decree, be it noted, forbade not the practice, but only the study.

It must be supposed that all of the clergy did not feel themselves entirely bound by this decree, or that obedience to it fell into disuse, for, some two and a half centuries later, the Council of Clermont reopened the issue by deploring the neglect of souls by the clergy. The following year, 1131, the Council of Rheims forbade to the monks and the regular clergy the practice of medicine or surgery *for money.* In 1139 the words, *for money,* were deleted from the edict. In 1162 the study of medicine again was forbidden to the religious. Other and stronger pronouncements followed, until, in 1212, the Council of Paris laid the sentence of excommunication upon those who, for the purpose of practicing medicine (or law), remained away from the monastery for more than two months.

Evidently abuses were real, and the Church was finding it most difficult to prevent the monks and the regular clergy from practicing medicine and surgery. The Church held that its members' first duties were toward the religious life. Activity in medicine and law beyond the cloisters led to mundanity in the lives of those whose lives ought to have been dedicated to things supernal. Monks whose knowledge of medicine and whose skill in surgery were famous were called away to make prolonged visits to princes and potentates who could, and perhaps usually did, surround them with extravagant feasts and extravagant pleasures and extravagant rewards. It was complained that the monks traveled about more and more and returned to their monasteries only upon the occasions of the highest feasts, if even then.

During these centuries Paris had grown to be the world's capital of learning. We do not know when the University of Paris was founded; perhaps about 1100 it could no longer be called a Cathedral School but should be called a University. But in 1219 the Faculty of Medicine of Paris was formally recognized by the Church. All of the teachers and all of the students were clerics. They submitted to the tonsure. They wore clerical robes. How rigorously the clerical regulations were enforced can be shown by many illustrations; let two suffice: in 1395 a student was denied his license because it was proved that he had been married recently; and in 1443 the Dean, Charles de Meauregard, was stripped of all his titles, rights, privileges, and immunities because he had been married!

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under his own direction. It was beneath the dignity of the physician to degrade himself to cutting; this was the office of the barber. In France and England, then, a deep rift was driven between medicine and surgery. The Faculty of Paris would not recognize the professional standing, nor the social standing, of the surgeons. Members of the Faculty and Licentiates of the Faculty were permitted to wear a long robe, significant of their positions. But the surgeons were permitted to wear only a short robe. In consequence of these things, many bitter professional quarrels arose; since the Faculty was the supreme authority, these quarrels usually resulted detrimentally to the surgeons of France.

The barbers were not permitted to wear any robe. In time, however (for surgery in France was advancing in spite of the opposition of the Faculty), the barbers began to be aware of the inroads which the surgeons were making upon their trade. The barbers protested against the surgeons, and their protests were meat and drink to the Faculty. Although the barbers were merely tradesmen, and bourgeois at that, the Faculty aided, in every way possible, the barbers in their efforts against the surgeons. It was completely beneath the dignity of the Faculty to have anything to do with the barbers beyond ordering them to perform certain incisions, and, indeed, members of the Faculty who could be proved to have treated the barbers as more than mere servants were subject to severe discipline and loss of rank and honor. Nevertheless, the Faculty, well aware of the rising power of the surgeons, secretly taught its art to the barbers and did all in its power to support them in their war against the surgeons. Far beneath the Faculty socially and professionally, they nevertheless formed another instrument by means of which the Faculty could harass the surgeons.

This unfortunate situation continued to deteriorate until at last Jean Pitard (1228-1315), physician to King Louis IX (St. Louis), approached his Majesty in an effort to resolve the difficulties between the Faculty and the barbers on the one hand, and the surgeons on the other. Pitard is too little known in our day; actually he was the moving spirit in the genesis of the great French tradition in medicine as well as in surgery. The King gave his approval to Pitard's plan, and the result was that on February 25th, 1255, Pitard established the *Confrérie de St.-Côme et de St.-Damien*, familiarly known as the *Collège de St.-Côme*, or, more familiarly, simply as *St.-Côme*. This was the world's first College of Surgeons. It was founded by a Frenchman, under the auspices of a French King.

It is not entirely certain that Pitard's appeal to the King was completely naive. Pitard urged that St.-Côme had for its primary purposes financial and other assistance to impecunious members, the assurance of a decent burial to deceased members, and the amicable settling of disputes between living members. It might have been said that a further purpose was to be an attempt to settle differences between the surgeons and the Faculty. At any rate, by about 1290 the *Confrérie* had prescribed courses of study for the surgeons, had formulated an oath to be sworn by the prospective member, had designed a long robe in imitation of that worn by members of the Faculty, and had organized a hierarchy of members. The prospective surgeon joined the *Confrérie* as an apprentice. In due time, and upon the payment of a fee of one franc, the apprentice became a bachelor. After certain studies and the swearing of another oath (not to mention the payment of twelve gold crowns in cash) the bachelor could become a licentiate: he was now "licensed" to practice surgery in Paris and its environs. After four years of such practice he might become a master, and himself take on apprentices, for fees. However, a surgeon could never attain to the title of Doctor unless he took an oath *to give up completely the practice of surgery.* Worse than this, no surgeon could ever receive the benediction of the Chancellor of Nôtre-Dame de Paris. There were other social and professional distinctions between the surgeons and the Faculty: the Faculty spoke in Latin, the ignorant surgeons spoke only in French: the surgeons had only a few saints to brag about, the Faculty had a saint for nearly every known disease; to mention only a couple.

The inexcusable antipathy between the Faculty and St.-Côme continued to increase until the illustrious Lanfranc came upon the Parisian scene. Lanfranc (Fig. 2: Guido Lanfranchi of Milan, died about 1315), a pupil of the illustrious Taddeo d'Alderotti (Fig. 3), who is famous for having taught that one cannot be a good surgeon unless one is also a good physician, nor a good physician unless one is also a good surgeon, became embroiled in one of the many differences between the Guelphs and the Ghibellines and was exiled from Milan in 1290. He had been born in Milan, and had established there a very successful practice in surgery—the fission between medicine and surgery was never as wide in Italy as it was in France

reactionary to his celebrated Italian teachers; it is still one of the great surgical classics.

Lanfranc remained at Paris from 1295 until his death in 1315. About 1310, with the approbation of King Philippe le Bel (Philip the Fair), he was able to effect changes in the teaching of surgery and changes in the requirements which must be fulfilled for obtaining the degrees of bachelor, licentiate, and master. Moreover, in the following year (1311), Lanfranc and Pitard succeeded in obtaining a royal edict which ordained that no one could practice surgery until he had passed an examination administered by sworn masters of surgery selected by Pitard or by his successors, in perpetuity.

But the conflicts continued. There were differences between the two orders of barbers, for one order could only sell ointments, antidotes, and cure-alls, while the other could use scissors and scalpel in

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We do not know where he began the study of medicine—perhaps in Montpellier, perhaps in Paris. He became a cleric, of course. It has been said that he was a misogynist, and there are grounds for such an attribution. He had to be celibate to study medicine in France, and afterward his having tuberculosis might have deterred him from taking a wife. In any event, having earned his degree of Master in Medicine he went to Italy. In Italy he became a pupil of the great Theodoric of Bologna, who later became Bishop of Cervia. As has been mentioned, the great rift between medicine and surgery which existed in France was hardly known in Italy. Theodoric was physician to Pope Innocent IV, but is better known in the history of medicine as a surgeon, and perhaps justly so. Far ahead of his time, he taught that wounds and incisions should be treated expectantly and on the dry principle. Since this teaching had a direct bearing upon the evolution of early French surgery, a brief digression, in explanation of Theodoric's doctrine, which was accepted and put into practice by de Mondeville, should not be out of order.

The doctrine of the four humors, originated most probably by Alcmaeon of Crotona, was brought to its final form by Galen. Health consists in an equilibrium of the four humors: blood, mucus, yellow bile, and black bile. If one of the humors accumulates in excess in the body, the equilibrium of the humors is upset and disease results. The humor which is in excess is known as the peccant humor. To cure the disease, then, it is essential to remove the excess of the peccant humor

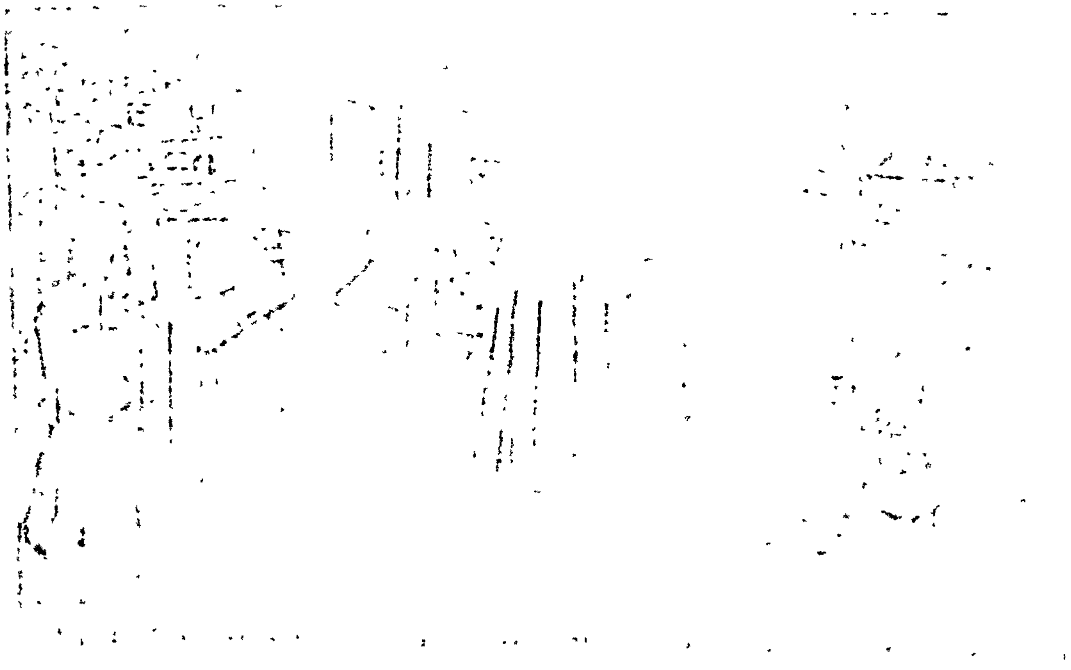

Fig. 3.—Maestro Taddeo d'Alderotto, of Florence and Bologna. (*From the author's private library.*)

addition to prescribing ointments and the like. There were differences between the regular surgeons of St.-Côme and the itinerant stone-cutters, herniotomists, and quacks. There were differences between the surgeons and the barbers. And there were, last but far from least, grave differences between the Faculty of Paris and the men of St.-Côme. These differences were not just professional jealousies; they extended into the social and even the religious aspects of life. Particularly difficult were the situations in which the nobles, or the King himself, were in need of medical attention. Here the complexities were increased by the fact that the apothecaries also were involved. In general, it required about nine men to attend the King: his physician, his apothecary, his surgeon, and their assistants (Fig. 4). Matters of propriety of rank seem to have had greater attention and consideration than the malady of His Majesty. To improve themselves in the matter of rank, the men of St.-Côme decreed, in 1396, that no one could be accepted as an apprentice unless he could speak good Latin. Members of the Faculty had been giving secret instruction to the barbers, but in 1494 courses given to the barbers were recognized formally. The Faculty had been allocated one cadaver each year for dissection; in 1499 the barbers demanded a cadaver for themselves. In 1503 St.-Côme was offered admission to a dissection provided that the surgeons would pay one third of the cost of the dissection, or else the barbers would be admitted. About the same time King Francis I allowed to the surgeons all the privileges, rights, liberties, immunities, and exemptions *(tels et semblables privilèges, franchises, liberté, immunité, et exemptions)* allowed to other graduates of the University of Paris. But the Faculty of Medicine would not receive a surgeon unless he had taken a solemn oath to abandon surgery forever. If we may look ahead for a moment: the war between the Faculty and St.-Côme was not ended until 1660, and it was ended then only when the surgeons submitted to the Faculty and took an oath of allegiance.

Into the middle of this scene came Henri de Mondeville. He came to be called Maître Henri de Mondeville, Chirurgien de Philippe le Bel, Roi de France.

We know little of him beyond what we can gather from his own book, which he wrote between 1306 and 1320. We do not know when he was born; we do not know even where he was born. He had no last name; most men of his time had no last name. Riesman has written, "He was probably born in Normandy, and his last name is known variously as Hermondaville, Amondavilla, Armandavilla, Amodaville, Mundavilla, etc." In ancient times ten illustrious cities claimed the honor of having been the birthplace of Homer. But only two have ever claimed the honor of having been the birthplace of Henri: the village of Mandeville, about three miles from Caën; and little Émondeville, near Valognes, in the Département de La Manche.

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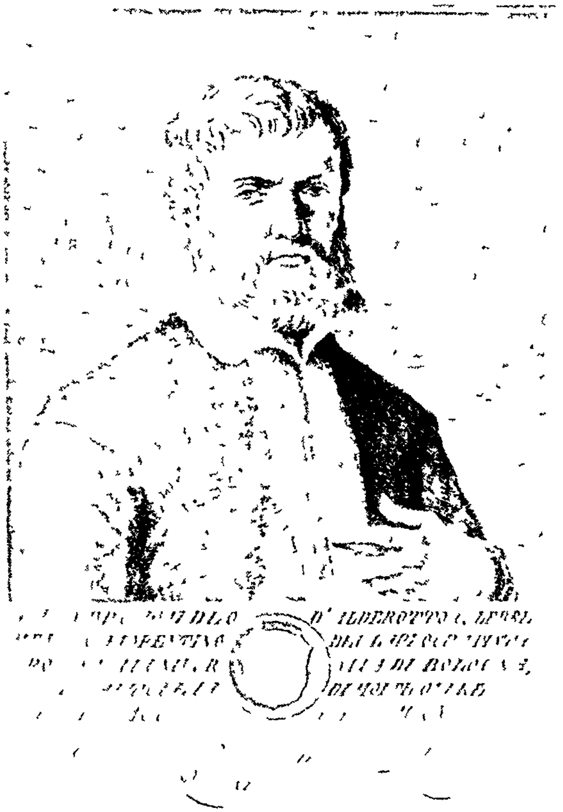

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Serapion, Rhazes, and Haly ben Rodhouan, each 38; and so on to single references to such men as Boethius, Horace, Lucan, Philaretus, Ptolemy, Seneca, Vegetius, and the like.[1] Whatever may be the surgical worth of these more than 1300 quotations and references, they show at least that de Mondeville was a man of admirable erudition in addition to being a surgeon of the highest skill. And, after all, his number of references are, if anything, percentagewise lesser than those one encounters in attempting to read most contemporary medical or surgical articles in most contemporary journals. And again, in his preface to his book de Mondeville had the grace to write [I abbreviate], "I, Henri de Mondeville, have set myself to this work for the honor, praise, and glory of our Lord Jesus Christ, and of the Blessed Virgin His Mother, and of the sainted martyrs Cosmas and Damian,"—there follows the name of the King and the future Kings of France and Navarre.

De Mondeville's book proper is preceded by a brief description of Arabic numeration. The surgeon doubtless thought this was a necessary preamble, since the Roman system of numeration, ponderous as it was, was still in general use.

The book is composed of five "treatises." The first treatise, on anatomy, is taken principally from Galen and Avicenna, and was originally illustrated with 12 (or 13?) miniature figures which constituted a potent criticism, later, of de Mondeville by Guy de Chauliac. The second treatise, which comprises about a half of de Mondeville's whole work, is concerned with [illegible]

surgeons and their patients. The third treatise is concerned largely with "sophistication," that is, with aids to beauty and with the treatment of skin diseases. However, it deals also with incisions, cauteries, phlebotomy, cupping, and amputation. The learned author then proceeds to a description of the methods of preparing cadavers for dissection, and also for preservation—the art of embalming. There follows a large section on the treatment of burns, warts, sunburn, and various other afflictions to which the flesh is heir, and an enlightening discussion of the theory of the humors as it was known to one of the most intelligent writers on the subject at the beginning of the fourteenth century. This is followed by a long section on ulcers and cancer.

De Mondeville's book proceeds from the third treatise to the fifth immediately; the fourth is lacking. In his introduction de Mondeville says that the fourth treatise will be concerned with fractures, disloca-

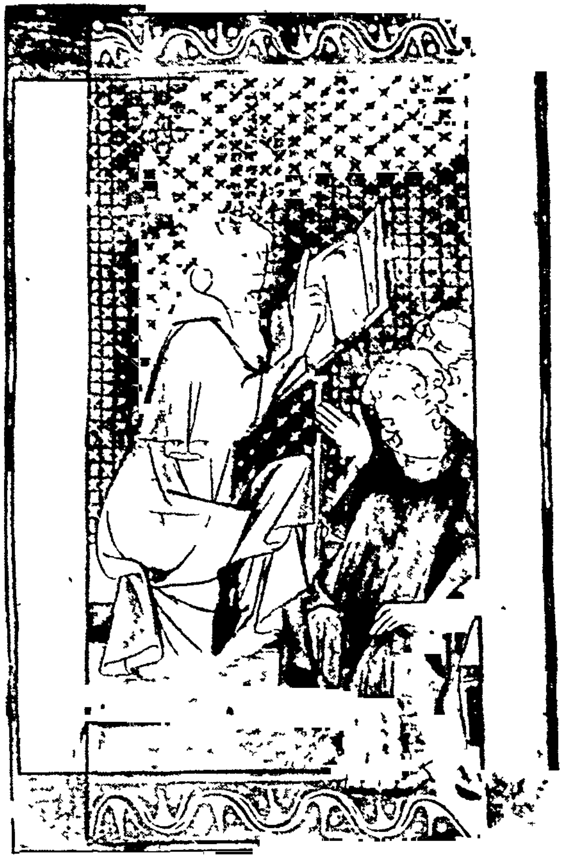

Fig. 6.—Henri de Mondeville. Miniature from Manuscript 2030, date 1314, from the National Library, Paris.

porary) in a violet robe, black knickerbockers, and red stockings (Fig. 6). He is tall and lean, with a sparse beard of grey; his hair was grey also. In this representation he is perhaps about age 50.

Beyond medicine and surgery, he was deeply versed in letters and philosophy. He was unafraid to attack anyone: priests, nobles, and even the King, alike felt the sting of his invectives; and de Mondeville showed in many passages how ignorant these men were.

Although he had a large and, in many cases, a wealthy clientele, he himself never became wealthy. He was learned enough to be without superstition, but he counselled his pupils to take full account of the superstitious beliefs of the common people and to make use of horologies, the theory of critical days, zodiacal mysteries, and the like.

He has been called a misogynist, but, as has been mentioned, this charge possibly has been based upon misconceptions of his clerical standing and the fact that he knew he was suffering from a fatal disease.

He was, after all, a Galenist, and adopted the humoral theory. But he was not completely a Galenist, as is proved by the facts that although he maintained the principle of the *vis medicatrix naturae*—the healing power of Nature left alone, he also held that Nature's first intention was to heal simply, and that suppuration was unnecessary to healing.

That he was well aware of the effect of opinion and gossip is shown by the fact that he cautioned his pupils never to undertake a surgical risk, even though a surgical procedure be absolutely demanded by the condition of the patient, if the patient's family and friends held out against it. "The opinion of people carries more weight by itself alone, and plays a larger part, than all else."

Although de Mondeville was beyond question the leading surgeon of his time in France—in point of fact, not merely in point of popular reputation—he was still a child of his age. He commented at length upon older and ancient texts; he used the logical procedures of dichotomy and syllogism; he quoted from the poets; frequently he went into long and devious descriptions and recapitulations which distract and abate the interest of the reader. These were the fashions of his epoch. He rested much upon authority: he quoted from Galen 431 passages; from Avicenna, 307; from Theodoric, 113; from Hippocrates, 68; from Aristotle, 47; from

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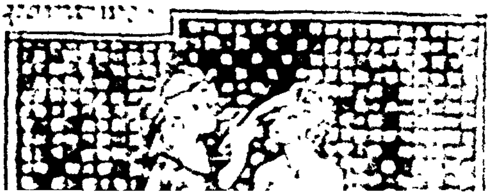

tions, torsions, and foldings of the bones. From the pen of so painstaking a writer and so excellent a surgeon, this treatise would have added, beyond any doubt, an enlightening chapter to the history of orthopaedic surgery.

The fifth treatise is commonly known as the *Antidotarium* of de Mondeville. Here the surgeon condescends to admit that surgery has its limitations, and that many conditions apparently surgical are better treated medically. "An *antidotarium*," writes de Mondeville, "is even more needful in Surgery than it is in Medicine." If we begin to wonder why, let us remember that the surgeon considered it within his province to treat sunburn and to provide depilatories for women. At the end of the treatise de Mondeville has appended a list of synonyms to the names of many of the drugs which he has recommended.

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One of the oldest, if not the very oldest, of the MSS of de Mondeville is MS 2030 of the National Library of Paris. It contains twelve miniatures, although Pagel had thought that nineteen were called for. In any event, Weindler has reproduced these miniatures, a number of which I am able to reproduce here. De Mondeville commenced the first section of his *First Treatise, Introduction à la Doctrine de l'Anatomie*, with (presumably) the figure shown here (Fig. 7), or one from which this one was copied, above the legend, *This is the figure of a surgeon, standing, holding in his hand a razor, with which he makes, in the various parts of a man standing nude before him, various incisions, according to the differences of the man's parts, and according to the doctrine given on anatomy, which follows.*

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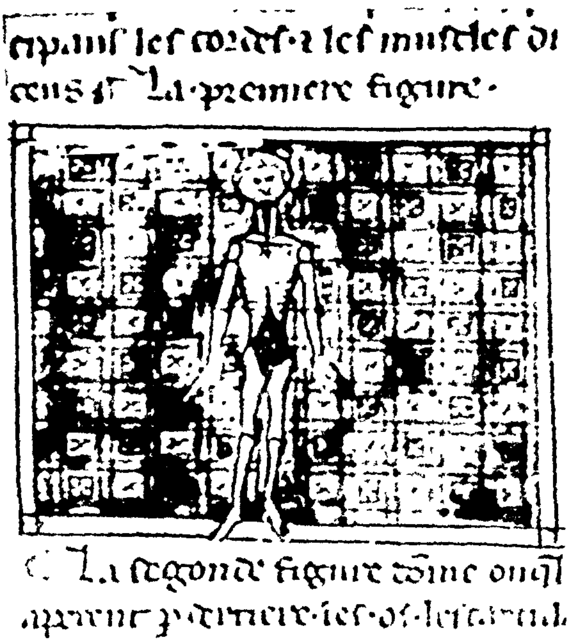

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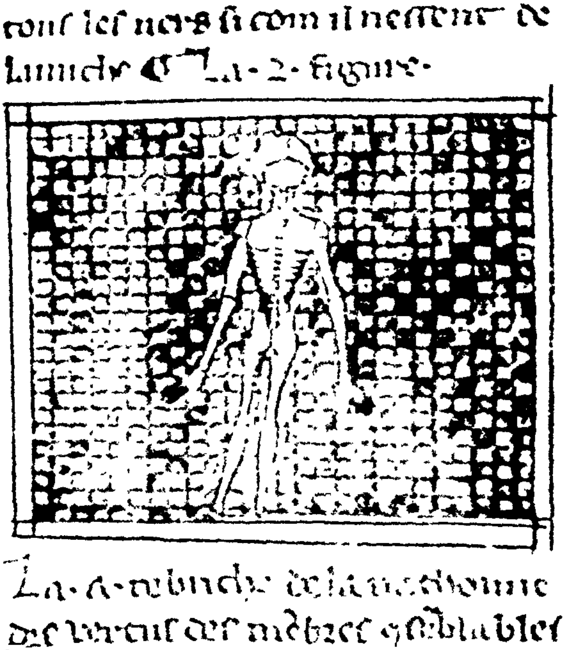

B

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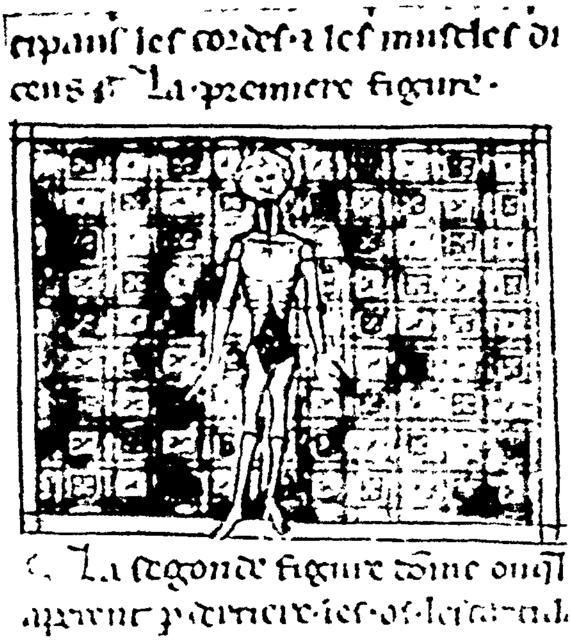

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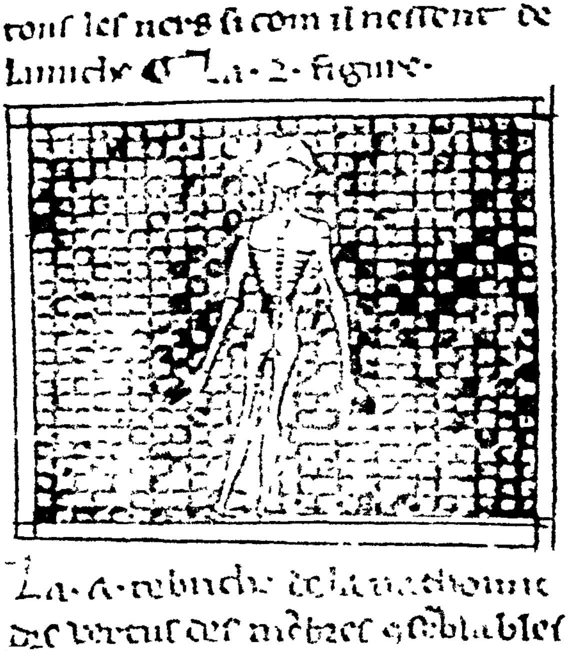

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¶ La ·4· reprouche de la anathomie des veines des membres semblables

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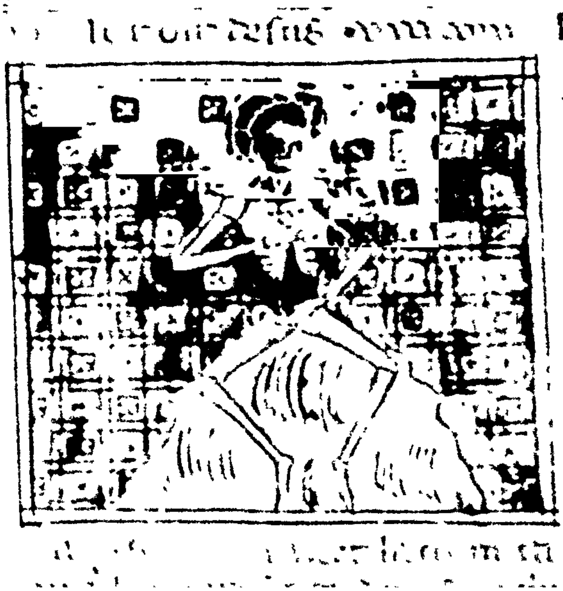

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la fourcele du ventre appert la grese [illegible] ¶ La ·6· figure·

La ·6· reprouche de la anathomie des [illegible]

front (Fig. 9*C*), from the middle of the forehead to the anus, through the middle of the nose, the mouth, and the tongue. *Inwardly, the Adam's Apple, the trachea, the heart, the lung, the stomach, the diaphragm, the omentum, the liver, the spleen, and the intestine are shown intact, with their arrangement in the living, as far as it is possible to show it.* In spite of the extent of the figure, the chapter deals only with the anatomy of the face. A single figure professes to show "the figure of the eye"; I have been unable to find such a figure in any of the old books available to me, unless the one subjoined suffices (Fig. 9*D*). The following pages in de Mondeville's work explain the anatomy of the forehead, nose, ear, mouth, and teeth. There follow brief chapters on the anatomy of the neck, the shoulder, and the arm. I append one figure (Fig. 10) which shows the veins of the arm; it is, presumably, a copy of a figure in the *Anatomy* of Mundinus made by Berengarius of Carpi just before 1521, and can be attributed to de Mondeville only dubiously.

Chapter VII of de Mondeville's First Treatise is preceded by: *A figure of a man sagittally sectioned from the back, from the vertex to the coccyx, through the middle of the spine. By this section the posterior aspects of all of the internal organs will appear* (Fig. 11). De Mondeville continued abruptly with a discussion of the anatomy of the chest, ribs, lungs, heart, and diaphragm, which modern anatomists, of course, routinely approach from the ventral side. In chapter VII de Mondeville gave an accurate description of the five-lobed (hog's) liver, taken from Galen or from one or more of Galen's successors. He described the two ducts of the spleen! And there is nothing but Galenism in the chapters which follow and which concern the urinary and reproductive systems, the anatomy of the hips and legs, and a brief summary. MS 2030, of the National Library, Paris, gives miniature illustrations for these subjects, but none is called for in the text.

Thus the "First Treatise" is largely a system of the anatomy of Galen.

The "Second Treatise" concerns itself with the treatment of wounds, contusions, and ulcers. It is in the Introduction to this Second Treatise that the famous passage occurs, "It is evident that a surgeon is inadequate if he does not know the art and the science of medicine, and anatomy especially." And this is followed by a passage perhaps even more famous: "The surgeon ought, furthermore, to be somewhat audacious, ought not to discuss things in the presence of laymen, ought to operate with prudence and wisdom, and ought not to undertake a dangerous operation without having foreseen all that might be necessary to avoid all dangers. He should be well formed, especially in his hands, having long, thin, agile, and untrembling fingers, and strong in all his body so that he can perform in a manly manner all of the good intentions of his soul. Let him be complaisant; let him devote himself completely to the sick so that he forgets nothing essential. He should promise cure to all of his patients; but he should not conceal the nature of the case, nor its dangers, if they exist, from relatives and friends. As far as possible he should refuse to undertake difficult cures. He should never undertake desperate cases. He should give his advice to the poor as an act of charity. If he can, he should make the wealthy pay him well. He should never eulogize himself, never blame others, and never hate another surgeon. He should work as hard as he can to achieve renown. He should comfort the patient with encouraging words and condescend to fulfill the patient's just demands provided they do not impair the treatment of the case." This

Second Treatise is preceded by a protracted discussion of twenty-six "General Considerations." This long passage is of highest importance in the history of the medicine and surgery of old France; unfortunately, it is too copious to review in detail in this monograph, and an outline of its contents must suffice.

The first "Consideration" clarifies the distinctions between the true physician and the true surgeon on the one hand, and on the other the barbers, users of sortilege, flatterers, swindlers, liars, alchemists, courtesans, procuresses, midwives, witches, converted Jews, and Saracens. This list of "healers" gives one a spacious glimpse of the state of medicine and surgery in France in the days of de Mondeville, who continues with a picture of how medical and surgical imposters strive to cheat not only the patient, but each other also. De Mondeville goes into a description of the methods which the surgeon must use to combat the popular superstitions of the day. He distinguishes between cleric and laic surgeons, and maintains that the surgeon must exercise his own judgment even if he must occasionally differ from the rubrics of Galen and of Galen's successors.

a science; in all of them it is an art. It is true that there are medical sciences, like anatomy, biochemistry, pathology, and the rest; but medicine (including surgery) must remain an art as long as human judgment plays its supreme part in diagnosis and treatment. And Hippocrates knew this. The practice of medicine, including surgery, is based as far as possible upon the medical sciences, but the practice itself is an art. And, indeed, at the end of the Sixth Consideration de Mondeville was brought to confess that surgery is both a science and an art: a science in its anatomic principles: an art in its exercise.

Interesting, in their original order, are the five considerations which the surgeon must think upon when he is summoned to treat a patient: first of all, his fee; second, to give no occasion for detrimental gossip; third, to operate prudently; fourth, to know the nature of the disease; and fifth, to estimate the vitality of the patient—whether he can recover naturally, or whether, and to what extent, he can endure the sufferings which surgery and the shock of surgery must impose upon him.

These five considerations, of course, do not reflect upon the character of the art lar opinion of his times. If this were not so, surely he would not have placed the payment of the surgeon's fee at the top of his list, and warned the surgeon that the rich will usually call upon him garbed in rags so that they should appear to be destitute. If the surgeon does not collect his whole fee promptly, de Mondeville warns of four dire results: first, the unpaid part of his fee will be lost to him, and if his patient should need a surgeon afterward he will call in another; second, he will lose the acquaintance and the friendship of his patient; third, the patient will do all in his power to prevent others from going to his surgeon; and fourth, if a cure is not effected, the surgeon will be charged with the blame.

No commentary upon this passage seems to be needed.

De Mondeville expounded at length upon the superiority of surgery over the other two methods of treatment, diet and medicine. This superiority is shown in three ways. First, surgery cures the more difficult diseases, where medicine is useless; second, surgery cures diseases which no other regime can cure at all—indeed, medicine cannot be said to cure any disease, since it probably was nature that did the curing; and third, the results of surgery are visible and manifest, while those of the physician are concealed—a very fortunate thing, he added, sardonically, for the physician. In an earlier passage de Mondeville had said that the mistakes of the surgeon are apparent to everyone, but the mistakes of the physician lie in the graveyards.

The strife between the Faculty and St.-Côme, of the thirteenth century, is still alive. It is interesting, perhaps, to note, however, that de Mondeville left his third treatise incomplete, and skipped the fourth entirely (because he was aware of his impending death), in order to complete the fifth, the *Antidotarium*, a lengthy disquisition upon the use of drugs in the treatment of "surgical" diseases! And in the same passages reviewed above, he said, again, "It is impossible to be a good surgeon if one does not know the principles, and the most important generalities, of medicine."

But, true to his colors, he held that surgery is more certain and "more preferable," nobler, surer, more perfect, more necessary, and *more lucrative,* than any other branch of medicine. It is more certain because the surgeon's instruments permit of greater precision. It is preferable because, according to Aristotle and Haly Abbas, it is more useful independently of medicine than medicine is useful independently of surgery. It is nobler because it can cure diseases which medicine cannot cure; and because it operates upon nobler parts of the body—for example, men and women attach much greater importance to a freckle on the face than they attach to a mass of constipated faeces in the bowel; surgery is nobler because it is practiced by nobler personages, such as kings, princes, and prelates, who would not be concerned about the pulse, the faeces, and the urine; it is nobler because God Himself was a surgeon when he made Adam out of the dust of the earth and Eve from Adam's rib; and because Christ made an emplastrum (surgical!) out of dust and spittle to cure a man's blindness! It is more perfect because, according to Avicenna and Haly Abbas, its end is better and higher. It is more sure because it does not use violent poisons and because, if the surgeon makes a mistake, the mistake is more easily corrected. It is more necessary because, according to Galen, it brings relief where medicine is helpless, the common people have more faith in it, and it is said generally that the man who puts himself into the hands of a physician is a dead man; moreover, it helps those who are born without an anus, a vulva, or a urethra, to whom medicine can offer no help at all. And surgery is more lucrative because a surgeon can always demand higher fees than a physician can, even if the surgeon has very little knowledge or none at all!

There follows a long disquisition upon the three sets of principles of Galen, Avicenna, and Johannitius, the *naturals*, the *unnaturals*, and the *contranaturals*, which it seems superfluous and tedious to discuss here. The surgeon's consideration of these results in a long list of "Contingencies" which (if he can remember them) will alter in several of a hundred ways his procedure in any particular case.

This is but one of many extended passages which make de Mondeville difficult to read and frequently dull. And he must have known it, for he wrote, "My purpose is to write solely for the instruction of the ignorant, and of poor scholars, to teach them as far as I may. For them it is necessary to use many words, examples, demonstrations, and other means of instruction . . . it is necessary to repeat things three and four times before they can grasp them." And in fact de Mondeville's book runs to nearly nine hundred quarto pages of small print!

correct treatment for you, continue it, and bring it to its salutary completion." Then he would inquire into the history of the malady: "My lord, be not displeased, nor hold my questions against me—when were you taken sick?" And he would ask other questions on the history and development of the disease. The questioning being over, the whole troupe of physicians and surgeons retires to another and a private room, for "In every consultation the masters enter into disputes in order to come to the truth, and sometimes they come to using such words as would make outsiders believe that they are in discord or have really come to blows—and sometimes this actually happens." Finally the eldest, or the most eminent, or the most illustrious (for example the King's physician or the Pope's physician), announces that each will have a turn at expressing his opinion, beginning with the youngest and least known: for if the best known and most illustrious were to speak first, all those beneath him in point of reputation or experience would naturally say nothing at all, and so the consultation would come to nothing. The most eminent of those present in the consultation then asks, in order, beginning with the youngest or least *and, if it is, what kind of evacuation is needed—for example, a bleeding. If a bleeding seems to be called for, where and in what part of the body should it be performed, and from what vein, and at what time, and in what place?—for one bleeds patients differently at different seasons, according to the physique of the patient, and even according to the phases of the moon and the positions of the celestial bodies, and according to an infinity of things. One bleeds the patient also according to the phase of the disease: its incipience, its incrudescence, its fastigium, or its decline. One must consider the patient's normal manner of living, the quantity of bleeding to which he has been accustomed in the past, the season of the year (for some patients are accustomed to be bled in Spring, others in Autumn), and many others things, such as the preference of morning, noon, or evening, fasting or after a meal and other things.*

The practice of surgery in de Mondeville's time was no simple matter of "separating the patient from his disease and putting the disease in a bottle."

And yet, despite his Galenical theorizing, he practiced good surgery. In treating a suppurating wound, fistula, or an abscess, he recommended: *As soon as the peccant humor, or the first quantity of pus, has come out, the pus begins of itself to abate very noticeably because of Nature's tendency to heal or because of the timely exhibition of a medicine. Now the surgeon ought to discontinue, completely or in part as seems wise to him, the drains which keep the wound open, not suddenly, but one by one, and he should continue to dry up the wound, as Nature does, until the healing is complete. For, as Galen says, it is always Nature which heals, and the physician is only the helper of Nature.*

Indeed, Nature is like the violinist whose music conducts and governs the dancers; we, physicians and surgeons alike, are the dancers, and when Nature plays the violin we must dance in time. And indeed, Nature, when she dries up a wound after a sufficient quantity of pus has been expelled, works for the best, for wounds, ulcers, and the like, never heal unless they dry up, as Galen knew. Therefore, when one uses the dry treatment, the more rapidly it is practiced, the better, for it is useless to employ several methods over a long period of time to do what can be done equally well by a simple and rapid method. The more promptly ulcers and similar conditions are dried up, the less will there be gangrene and loss of substance in the injured part and the more will a good scar result, even though all the surgeons of antiquity and most of those of modern times are of the contrary opinion. It is unnecessary to remark upon the excellent instruction given here by this great French surgeon.

Yet this strange misogynist could not forget that the primary obligation of the surgeon was to himself. His book contains many long pages whose purpose it is to teach the surgeon to charge the highest possible fees and to insist upon payment, in advance if necessary. And at last he wrote, "You surgeons, then, if you have operated conscientiously upon the rich for a fitting fee, and upon the poor for the sake of charity, you need not fear fire nor rain nor wind, you need not practice religion nor make pilgrimage nor do other holy works, because by your science you can save your souls, live without poverty, and die in your own homes; you can live in peace and joy and exult because your reward in Heaven is great!"

It is, of course, as unseemly for a surgeon to enter the field of theology as it is for a theologian to appraise knowledge of surgery.

De Mondeville put very succinctly the advantages of his conservative and "dry" treatment of wounds. He made eleven points: 1) do not sound wounds; 2) do not insert drains; 3) by this method the wounds do not suppurate; 4) they do not become painful; 5) no danger supervenes; 6) the treatment is not painful; 7) it is not laborious, but easy and short; 8) it prescribes wine and meat; 9) it does not remove bones or pieces of skull from wounds of the head; 10) it results in good scars; and 11) it does not paralyze members by destroying nerves. Of course, some of these considerations are of little importance; on the other hand, some of them are momentous, and upon them rests much of de Mondeville's inextinguishable reputation as one of the great surgeons of all time. Perhaps of especial interest to some is the statement that his treatment prescribes wine and meat.

The *Second Treatise* proper is concerned with the treatment of wounds. It gives the surgeon directions under eight heads: first, the extraction of foreign bodies; second, the control of hemorrhage; third, medicines to be applied to wounds; fourth, bandages and sutures; fifth, evacuations and potions to be administered; sixth, diet and regime in the treatment of wounds; seventh, cold abscesses and delayed healing; and eighth, the manner of obtaining good healing. De Mondeville knew very well that a sutured nerve retracts toward

It is equally true that contemporary scientific writing has its traditional forms, like the useless references to the "pot-boiling" articles which frustrate the student of contemporary scientific literature. Indeed, the present writer knows of one case at least in which the experiments were imaginary, the animals non-existent, the statistics and graphs fictitious, and the conclusions fatuous; yet the paper was presented at a convention of a nationally known learned society and its contents were used as authoritative for other papers! De Mondeville, being fashionable, proved his points by syllogisms and by appealing to Avicenna and others, instead of basing their proofs upon the experience of Theodoric and himself, in the hot crucible of the battlefield.

The remainder of the long Second Treatise is concerned, in almost infinite detail, with the proper treatment of conditions from hornet-stings to cancer. It is impossible, within the limits of this monograph, to describe these manifold treatments; the reader who is interested and who can read French will find copies of Nicaise's version and exegesis in any good library. It should be mentioned, nevertheless, that de Mondeville, like any really expert surgeon today, is greatly concerned about the medical after-treatment of oper-

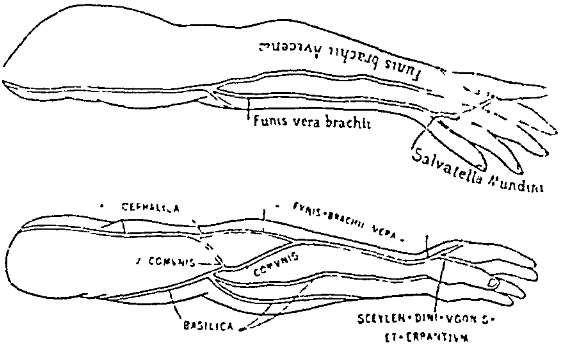

Fig. 10.—Veins of the arm. It is barely possible that this is from an original by de Mondeville; more probably it is a copy made from the *Anathomia* of Mundinus by Berengarius of Carpi or another.

ing of persons of different degrees, ranging from nameless peasants to popes, and this section merits its own special treatment because of the insight it gives into the conditions of society and into the status of the different branches of the medical profession in the days of de Mondeville.

Following a prolix discussion of the treatment of those suffering from "ventosity" (gas gangrene?), and of the preservation of the bodies of those who had been killed in battle or killed by blows resulting in contusions; or hanged, quartered, drowned, *et autres*, and of those who had suffered from "non-rheumatic" pains of the various parts of the body, the surgeon goes into the discussion of the "sophistication" of the bodies of men and women. This includes the treatment of sunburn, vitiligo, flea-bites, itching, leanness, adiposity, burns, warts, tumors, and a host of other afflictions which are manifested entirely or partially on the skin. Like the passage on the preparation of the dead body, this section is of immense interest in its representation of the state of individuals and of society in the days of de Mondeville.

He could not find among his contemporaries any surgeon who was disposed to study, and very few who were even literate—"and if there are a few who are literate, they are either just barely so, or else consider it more worth while to gain an extra five sous than to share their knowledge with others." He could find only mutual jealousy and suspicion, and a desire to make money, which is superior to all other desires. This has led, de Mondeville opined, to a continuous war between surgeons and surgeons, and between physicians and physicians. A truce has been declared: any condition which shows upon the surface of the body, or wounds, abscesses, fissures, fistulas, and the like, in their treatment fall within the province of the surgeon; all internal conditions, as of the chest, abdomen, and the like, belong to the physician — "This pleases us surgeons much; may it last through all the ages and be observed inviolably!" It is evident throughout de Mondeville's book that, however capable a surgeon he may have been—and there is no question upon this point—he was interested first of all in his fee; second in de Mondeville; and third, in the prestige of surgery.

In his doctrine of incisions he made great points of the place for the incision, the time for it, its relation to the position of the signs of the zodiac, and its relation to the wishes, usually superstitious, of the patient's family and friends (Fig. 12). He was, after all, a child of his time, and there was little he could do—if, indeed, he thought of doing anything, which he seems to have not done—to alter his intellectual environment and the tradition into which he had been born. In the question of bleeding, he made note of the fact that in each lunation the moon passes through four phases (quarters); the first quarter is warm and wet and resembles Spring and youth; the second is warm and dry and resembles Summer; the third is cold and dry and resembles Autumn and middle age; while the fourth is cold and

- CHYLE
  - Phlegm
    - natural
    - unnatural
      - aqueous
      - mucilaginous
      - glassy
      - plastery
      - salty
      - sweet
      - astringent (2 kinds)
      - acidic (2 kinds)
  - Yellow Bile
    - natural
    - unnatural
      - lemon yellow
      - egg-yolk yellow
      - leek-green
      - verdigris
      - burnt
  - Blood
    - natural
    - unnatural (5 kinds)
  - Black Bile
    - natural
    - unnatural (5 kinds)

Tabulation of de Mondeville's (see text).

moist and resembles Winter and old age. So (de Mondeville continued) young girls menstruate during the first quarter of the moon; young women during the second; mature women during the third; and older women during the last. And therefore the surgeon must bleed according to the age of the patient and the phase of the moon! There are numerous directions on the

The chapters which follow are devoted to "sophistication," or, in contemporary parlance, "beauty treatment," for men and women. Sunburn, pallor, excessive or insufficient hairiness, freckles, moles, warts, and the hundred other blemishes to "beauty" are described, together with the surgeon's method of treating them. Here again is a [illegible]

Lice (pediculi) are known to everyone; there are four reasons for treating them: first, they cause suffering; second, those who have lice can hardly refrain from hunting them out beneath their garments, against plain decency, and are thus distracted from their other [*!*] *work, and, moreover, when the lice are numerous they come sometimes to the outside of the garments, and this is distasteful and disagreeable to those who see them; third, sometimes they suck and bite so strongly that they cause bleeding; and fourth, what is worse, they spoil the appetite, pale the complexion, consume and make lean and exhaust the strength of the whole body.*

The treatment (surgical!) is by baths. ointments, diet, evacuations, and bleeding!

The Second Doctrine of the Third Treatise is composed of twenty-three chapters dealing with the various methods of treating abscesses according to Galen's humoral theory of the genesis and nature of abscesses. It is of no practical, and little historical, interest. I give here, however, the table formulated by de Mondeville, of the subdivisions of the humors. It should be mentioned, perhaps, that the four humors are generated from the *chyle*, the juice derived from the digestion of aliment (see chart, p. 247).

The treatment of ulcers or abscesses, then, depends not only upon the positions of the signs of the zodiac and the phases of the moon and popular superstitions, but also upon the composition of the ulcer or abscess according to the table of the humors. And it required nearly eighty quarto pages of small print for de Mondeville to direct the surgeon in his treatment of an ulcer or an abscess! He gives, to begin with, eighteen "rules"; one chosen at random has nineteen "exceptions." Small wonder that most of the surgeons were "illiterate"—and yet the physicians had much more to memorize if they were to pass the examinations of the Faculty.

At the end of the nearly eighty quarto pages mentioned, occurs the lacuna in de Mondeville's book. There is an introduction to the "Third Doctrine" of the "Third Treatise," but that is all. In this introduction de Mondeville mentioned that he had outlived his time, according to the judgment of every man of medicine, already by three years. The entire "Fourth Treatise" is lacking; it was to have dealt with fractures, dislocations, malformations, and distortions of the bones. As it happens, de Mondeville perhaps would have served surgery better had he written his "Fourth Treatise" instead of this fifth one. There were plenty of Antidotaries available—far more than there were treatises upon injuries and diseases of the bones. De Mondeville explained that he had hastened to his Antidotary because of the urgent requests of his students that he compose one.

The Antidotary is preceded by a long discussion of nineteen "Preliminary Propositions," resting mostly upon the authority of Galen, and including, for example, a definition of the word *antidote*; the necessity of an antidotary; the three justifications for the writing of an antidotary; a proof that an antidotary is more needful to a surgeon than to a physician; the three reasons why the title of such a work should be "Antidotary"; Galen's five reasons (to which de Mondeville added two of his own) for the composition of topical ointments; de Mondeville's seven reasons for composing the Treatise; his three reasons for hurrying on to it; the fourteen exceptions to the rule for purgation; and the like. It is here that the famous passage occurs: *"It would be an absurdity, and almost a heresy, to think that God, glorious and sublime, had given to Galen his sublime genius on the condition that no mortal after him should discover anything new. What!—God would have given up thus a part of His power! Has not God given to* *each of us individually, as He gave to Galen, a natural genius? We would be miserable indeed in spirit if we did not learn more than had been discovered before us.*

And he continues, "We moderns are, relatively to the ancients, like a [*sic*] pygmy placed upon the shoulders of a giant: the pygmy sees everything that the giant sees, but he also sees farther."

De Mondeville proceeded into the method of applying a "topic" to those who are plethoric: the method is complicated by an enumeration and discussion of the fourteen exceptions to the general rule. In earlier times a simple discussion would have sufficed, but this no longer was true because of "the wickedness, the perfidy, and the perverseness of modern surgeons. *Being compelled to put ourselves on guard against the malice of men, and to conform our practice to that of our contemporaries,* it is preferable that we should deceive those who would deceive us than to become victims of their frauds, and so, sometimes, we are constrained to misrepresent and to corrupt our art . . ." "topic," but also the manner of its preparation. The practitioner of today has only to utter a trade-name; he probably does not know the composition of what he is prescribing, and has left its compounding to the pharmaceutical producer. But de Mondeville, to be sure that his students should know precisely how to prepare these "topics," added a ninth chapter of forty pages (again quarto, and again in small print) of synonyms for the drugs which he had mentioned, giving, in nearly all cases, the Latin, Greek, Indian, Hebrew, and Arabic names of the substances to be used, with their sources, and frequently with the means of distinguishing substitutes from the original drug.

And thus ends the *Surgery* of Master Henri de Mondeville, Surgeon-in-Chief to Their Majesties, the Kings of France.

It should be said of him that he was surely the most advanced surgeon of his time. He applied well the lessons which he had learned from his most influential teacher, Theodoric. He could not escape from Galen—but this hardly can be held against him. Included in his picture of opinions upon matters of medicine, history, philosophy, and theology, wherein he frequently stumbled upon his own feet. He, being a true child of his own age, was excessively prone to lean upon ancient authority and upon a semblance of syllogistic reasoning.

And withal, he remains one of the great surgeons of history.

Very valuable is the picture of early French surgery which his book depicts in almost countless passages. So great was his influence that no real advance in the surgery of the French was made until the time of Guy de Chauliac, and perhaps not even until the time of Ambroise Paré. The charlatans, the stone-cutters, the herniotomists, and the quacks continued their nefarious practices, but French surgery was established. It never must be forgotten that the surgeon, no matter how capable he was, had to work without an effective anaesthetic and with no knowledge whatever of antisepsis, not to mention asepsis. Preoperative and postoperative care were virtually unknown. Beyond the skill of the surgeon and the robustness of the patient whose leg was being amputated, there were only the phases of the moon, the positions of the signs of the zodiac, and perhaps prayers or magical incantations.

Unfortunately, de Mondeville's advocation of the dry treatment of wounds—perhaps, in the long view, his greatest contribution to surgery (though it should be ascribed rather to Theodoric)—was not accepted generally. This fact only shows how far de Mondeville was ahead of his time—or perhaps how far the surgery of his time was behind him. There is something of a parallel here with the heliocentric theory proposed by Aristarchus of Samos, except that the vindication of Aristarchus required about a thousand years.

In any event, the surgeons of France largely refused to accept the dry treatment of wounds. The production of "laudable pus" was looked upon as the great desideratum of surgery, for it represented the evacuation of the peccant humor. And before long the momentous influence of Guy de Chauliac was to annihilate, nearly, de Mondeville's teaching.

De Mondeville died in (or very near) 1320, when Guy de Chauliac was about twenty years old. De Chauliac (or Guy, as he is called commonly) was another whose last name is unknown; *de Chauliac* refers to the fact that he was born, presumably, in the village of Chaulhac. He is known as Gui, Guido, and Guidon, Chaulien, Chualhaco, and Gualiaco, and also with lesser variations of his usual appellation (Fig. 13). Presumably he studied at the Universities of Toulouse, Montpellier, and Bologna; in the last he appears to have been a student under Bertucchio, who in turn had been a student under Mondinus. At Bologna, of course, the most celebrated human dissections of the time were being performed. He went to Paris and became a cleric in order to continue his studies. However, the clerical life must have appealed to him for, in 1344, he was made Canon of the Cathedral of St.-Just in Lyons, and, in 1353, Canon of the Cathedral of Rheims. He was the personal physician of the Popes of Avignon during part of the Babylonian captivity and during the great plague of the time of Boccaccio—indeed, it has been presumed (though no evidence has been adduced excepting that of the eminence and reputation of de Chauliac) that he attended Laura, whom Petrarch addressed in his sonnets. He himself contracted the plague in Avignon in June or July of 1348, and was ill for six weeks, but finally "escaped, by the Grace of God."

De Chauliac was not, as some have said, the greatest of the surgeons of the Middle Ages; in this respect he was surpassed by de Mondeville and by Theodoric, and probably also by Hugh of Lucca, by William of Salicetus, by Lanfranc, and perhaps by others also. He was, however, surely the most famous of them, and surely the most important in influence.

Two books are extant under his name, *The Great Surgery* and *The Small Surgery* — *Chirurgia Magna* and *Chirurgia Parva*. The original title of the *Great Surgery* seems to have been *Chirurgiae tractatus septem, cum antidotario*. This was written in 1363, but not printed until 1470, at Venice, and it is not entirely clear that the printed version follows the manuscript precisely. The *Seven Tracts* seem to have been the following: first, anatomy, or the topography of the patient; second, tumors; third, wounds; fourth, ulcers; fifth, fractures; sixth, dislocations; and seventh, special diseases. There is appended a discussion of the instruments used, the instruments which the surgeon should carry with him at all times, and the usual antidotary. It has become customary, however, to think of the *Great Surgery* of de Chauliac as consisting of three parts: the first, on anat-

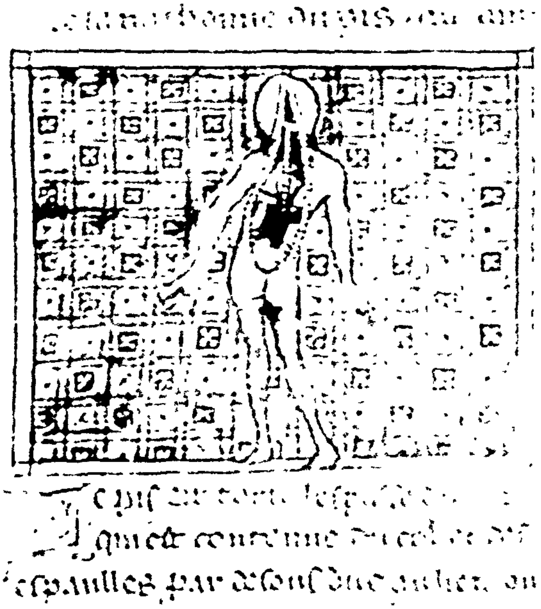

Fig. 11.—"A figure of a man sectioned sagittally from the back, from the vertex to the coccyx, through the middle of the spine. By this section the posterior aspects of all of the internal organs will appear."

bodies used were those of human beings, monkeys and apes, swine, and, to a lesser extent, other animals. The cadavers were prepared by drying them in the sun.

for dissecting the abdominal organs first was that they were the first to putrefy. No methods of embalming were in use, and no refrigeration for the preservation of the cadaver was to be had. As the work proceeded (usually on the next day) to the dissection of the thorax; and on the third to the dissection of the heart and other organs; the stench from the cadaver became stronger and stronger, and sometimes the dissection of the extremities had to be forgotten. One notes that the anatomic descriptions of the extremities are far less accurate, and far more incomplete, than are the descriptions of the internal organs. The liver, of course, was still represented as having five lobes, and this, again, of course, is evidence that much of the anatomical knowledge of the time was gained from Galen and from the dissection of swine, or from copying the writings of anatomists and surgeons, followers of Galen, who had dissected only swine—or, it might be, that the human body changed since Galen's time! It is probable that de Chauliac never dissected a cadaver of any animal—including man—but had only been present at numerous dissections performed by, or performed under the direction of, Bertuccio. Nevertheless, de Chauliac exulted: "In these two ways we must teach anatomy on the bodies of men, apes, swine, and divers other animals, and not from pictures, as did Henri de Mondeville, who had thirteen pictures for the demonstration of anatomy."

We must be grateful to de Chauliac among other things for specifying the number of pictures which his illustrious predecessor possessed.

He held to the principle of the *vis medicatrix naturae,* asserting that the surgeon (or physician) could be looked upon only as the helper of nature. In this role of helper the surgeon had five duties to perform: first, to remove foreign bodies from the wound; second, to bring together the parts which had suffered "a solution of continuity"; third, to reunite these parts; fourth, to care for the injured tissues; and fifth, to correct any untoward developments. One of these accidents was hemorrhage, and de Chauliac taught that hemorrhage should be controlled by closure of the wound, or by packing the bleeding region, or by compression of the bleeding vessels, or by ligation of the bleeding vessels, or by the actual cautery. No sounder advice could be given today. His suture-material consisted usually of silk.

He described the five "sects" of surgeons:

1) Those who, like himself, Galen, and most of the rest, promote coction of the peccant humor and suppuration in the wound. (In difficult cases in respect of the production of pus, such extreme measures were taken as actually to rub dirt and mud and even excrement into the [presumably] clean wound);

2) Those who, like Theodoric and de Mondeville, attempt to secure healing by first intention by washing the wound with wine and promoting dry healing;

3) Those who follow Lanfranc and William of Salicetus by removing injured tissues and applying mild ointments and plasters;

4) Those who use magical charms, together with oil, wood, leaves of cabbage, and the like, because they believe that God has placed special virtues in woods, plants, and rocks;

5) Women and silly persons who sit with hands folded and exclaim, "God's will be done, amen!"

Riesman has reminded us that de Mondeville had said that the vulgar divide diseases into two classes: those which have causes and those which have none.

It is evident from his enumeration of the categories of "surgeons," and also from numerous passages in de Chauliac's writings, that he was reactionary and did not subscribe to the dry principle in promoting, or in attempting to promote, healing by first intention as this had been formulated by Theodoric and de Mondeville. "And so," someone has bewailed, "perished the beginnings of antiseptic *surgery nearly 600 years before its independent discovery in modern times!*" Yet there is some truth in this lament. Washing a wound with wine will cleanse the wound and will (depending upon the alcoholic content of the wine, which need not be high) render it "antiseptic," or nearly so. De Mondeville's percentage of fine scars must have been far higher than was that of de Chauliac. Certainly washing with wine was, on the face of it, better than smearing mud or dung into an open wound.

If anything, de Chauliac was more Galenical than Henri de Mondeville had been. He was excessively meticulous in giving directions for the choice of the vein which should be opened in blood-letting, not only considering the positions of the signs of the zodiac, but going even so far as to maintain that bleeding should be done only during the hours of moonlight, and only upon the seventh, ninth, eleventh, seven-

stricken died, except some few who escaped at last with buboes only.

To protect one's self one could only fly from the land before being stricken, and take a purge of pills of aloes, be bled, purify the air with fire, strengthen the heart with senna and other fragrant substances, maintain the equilibrium of the humors with Armenian bole, and prevent putrefaction by the taking of sour substances.

To cure this disease, one must employ blood-letting and purges and take electuaries and cordials. The buboes might be ripened with figs; or by the application of peeled onions mixed with yeast and butter. Once ripened, they should be incised and treated like ulcers. Or they may be cupped, scarified, and cauterized.

That the physicians (and surgeons) did what they could to protect themselves against the plague is well illustrated in depictions of "the plague doctor" at the time, and in times subsequent.

And yet—human nature being what it is—de Chauliac, like de Mondeville and many another, wrote long passages upon "sophistications." These amounted to beauty treatments: the removal of freckles and other blemishes, the treatment for excessive redness or excessive pallor of the skin, the extirpation of moles and warts, epilation, and the gracing of the breasts and the sexual organ of a woman. One never must forget that one of the first duties of the medical man always has been the treatment of physical blemishes. In the country now called France, in the thirteenth century, human grief was not born on the field of battle nor in the hospital alone; it was born also when the hair faded and fell, when the skin wrinkled and the eyes grew dim, when the fires of youth burned low. It is so today.

But "sophistication" included also the treatment of diseases of the skin, dentistry, the handling of venereal diseases, St. Anthony's fire, and a whole host of other medical and dermatological conditions. These, being manifested externally, were within the province of the surgeon rather than that of the physician. De Mondeville's dictum that the physician should treat only internal diseases, leaving those with external manifestations to the care of the surgeon, had had a real and enduring effect upon the medical professions of the French.

If de Chauliac were reactionary to de Mondeville in the actual practice of good surgery (at least as far as the antiseptic and dry treatment of wounds is concerned), de Chauliac is much beyond his illustrious predecessor in his depiction of the "ideal" surgeon: he must be, first of all, a man possessed of an humanistic education; second, he must be expert in surgery; third, he must be a man of superior intelligence; and fourth, he must be a man impeccable in conduct. There is nothing here concerning the magnitude of the fee or the urgency of collecting it (in advance, by preference), and no attempt to invade the precincts of the theologian or the philosopher. If one must consider de Mondeville the better surgeon—and it appears that one must — assuredly one must consider de Chauliac the better man.

De Cahuliac died in 1368. His *Chirurgia Magna* remained the supreme authority in surgery for some two centuries, that is, until Ambroise Paré took up his pen. It far surpassed, in popularity, de Mondeville's work. It was written originally in the vernacular (for the men of St.-Côme commonly spoke French instead of the Latin of the Faculty), and was published first from Paris in 1478 under the title, *La Pratique en Chirurgie du Maistre Guidon de Chauliac.* The first edition in Latin was published from Venice in 1498. Many editions and translations have appeared since, the latest being that of Nicaise, in modern French (Paris, 1890).

But besides the *Chirurgia Magna* there exists a *Chirurgia Parva* (which is known also by other titles), and this smaller work has been attributed commonly to de Chauliac. It seems probable, that this abridgement was made by another author; and, in fact, a study of several editions and several translations makes it seem likely that it is a compilation of several works, by authors some of whose names are unknown, and represents a digest, with additions, of the *Chirurgia Magna*. The usual title is *The Compendium of the Surgery of Guy de Chauliac*. Of course the title itself is ambiguous: is the *Compendium* a compendium of the *Surgery "of" de Chauliac*, but made by another or others, or is it a compendium of the *Surgery, "by" de Chauliac?*

It appears to have been written by several hands. The first two-fifths (approximately) of the book are written in the form of question and answer, and appear, largely, to be a "cram-book" for students, composed, possibly, by a senior student, a recent licentiate, or a member of St.-Côme who was attempting to augment his income by selling such a work to students answers which a professor must check as "correct." It remained only to memorize them!

The distinctions which were made in the *Chirurgia Parva* cannot be described: only an example or so will suffice to show the modern surgeon the difficulties with which the French surgeon of the fourteenth century had to contend: What is diaeresis? It is an operation which divides parts which have become united against the order of Nature. It is divided into four kinds . . . of the kind of diaeresis of soft parts there are the following types: haplotomy, catachasmos, perieresis, hypospathismos, periscythismos, encope, angeiology, and lithotomy! The questions and answers are continued into Circumstances, Dispositions, Illnesses, Symptoms, Cures, Orders, Substances, Indications, Naturals, Unnaturals, Contranaturals, Temperaments, Humors, Parts, Faculties, Actions, Spirits, Baths, Repose, Evacuations, Inanitions, Signs, and the like.

The Galenical (unfortunately and, of course, incorrectly, considered "philosophical" by many) implications of early surgery are most manifest.

And one is amazed at the stultified, pseudo-scholastic expressions found everywhere in these treatises: a laceration is ments, plasters, waters, balsams, eyewashes, cures for tooth-ache, and the like. Perhaps the greatest significance of these passages is that the practice of surgery in fourteenth-century France was still compounded with the practices of the traveling quacks, etc., whose race was yet far from extinct.

In the section on bleeding the "questionnaire" takes no sides. De Chauliac allowed forty veins to be opened; others allowed only thirty-two, and yet others insisted upon forty-five. The veins were named, the proper season for opening one or another was specified, and the whole process of blood-letting was set up as a specific science on its own.

It is all but impossible to follow the descriptions of drugs and treatments in the long sequel of questions and answers. The favorite "scholastic" distinctions between animals, plants, and minerals are made, together with definitions which today are nearly meaningless. There is a long passage upon the varieties of drugs which the surgeon must use: attractives, resolvents, suppuratives, emollients, modificatives, astersives, sarcotics, epulotics, detersives, agglutinatives, caustics, corrosives, anodynes, narcotics, emplastics, apophlegmatics, etc. If we look at but one of these classifications, narcotics, we read: *The narcotics are cold medicines, proper and useful in desperate cases to mitigate excessive heat. Some are simples, some are composite. The simples are opium, root of mandragora, solatrum, poppy, hyoscyamus, and others. The composites are trochees, collyria, and suppositories.* Lettuce, at least, is omitted from the list.

The next "treatise" in the so-called *Chirurgia Parva* attributed to Guy de Chauliac is entitled, *On Maladies which are not Tumors, nor Wounds, nor Ulcers, nor Fractures, nor Luxations, etc.* The treatise is concerned with the definitions, distinctions, classifications, treatments, and the like, of gout, the plague, venereal diseases, venereal buboes, smallpox, erysipelas, herpes, phlyctenae, papules, leprosy, and others, of which there are numerous kinds of each. Other conditions, from leprosy to freckles, are included in the "treatise."

With the beginning of the next "Treatise," *Concerning Operations in General*, the literary device of question and answer disappears. It seems most probable that de Chauliac himself had nothing to do with the production of the *Chirurgia Parva*, as it is called commonly, although all editions which the present writer has seen are entitled *Chirurgia Parva Guidonis Chauliaci*, or to that effect. Nevertheless, the question-and-answer "cram-book," if one may call it that, seems not to have been written by de Chauliac, but by some student or follower of his, and subsequent additions, not in question-and-answer form, seem to have been added by others (or another) at later dates (or a later date). The present writer possesses a copy of an Italian translation of the *Chirurgia Parva* (Florence, 1697). The translation from French to Italian was made by Julius Caesar Arizzarra, the Pisam, and Arizzarra has made two acknowledged additions to the *Chirurgia Parva:* a fairly long passage on the *Condition of the Surgeon*, and another fairly long passage entitled *A Treatise on Tumors, and Fistula in Ano and in Adjoining Parts*. Perhaps it should be supposed that the first two-fifths of the book were composed from de Chauliac as a student's "cram-book" by an author now unknown, and that the last three-fifths were subsequent additions by authors (or an author) now equally unknown. We do know that Arizzarra added two "treatises," which he acknowledged.

In any event, the method of question-

and-answer was suddenly and perhaps unaccountably dropped. Moreover, in the succeeding treatises more frequent references are made to more modern (at the time) authors and theories, and also to preparations of drugs which were unfamiliar, it appears, to Guy de Chauliac.

The first of the treatises following those of the question-and-answer kind (and barring that of Arizzerra of Pisa, *On Tumors, etc.*) bears the title, *On Surgical Operations.* Here occurs a reiteration of de Chauliac's conviction that the surgeon should possess a sound knowledge of anatomy. This, of course, was difficult to obtain at the time, and it must be presumed that the writer considered a sound knowledge of anatomy to be that which could be had from attending a couple or a half dozen of probably public dissections of the bodies of executed criminals, although there may have been included a dissection or so within an amphitheatre of a University. Otherwise the dissections were of animals. There follow a few chapters on the methods of suturing wounds, with a special chapter on the suturing of severed tendons; then some [illegible]

Fig. 12.—Guy de Chauliac (1300-1368).

sarcocele, hydrosarcocele, epiplocele, enterocele, enteroepiplocele, pneumatocele, hydrocele, hydroenterocele, [illegible] ment of stone in the bladder. One wonders whether he was teaching the regular surgeon to perform the operation practiced, usually quite successfully, by the itinerant ithotomist, or whether he himself had earned his very worth-while lesson from hese same itinerants. Certainly, if one followed the directions given by de Chauliac, the lithotrity and removal of he stone in the bladder could be done very nicely today—more nicely, perhaps, than t is done sometimes. He gave detailed nstructions for the treatment of untoward consequences also, especially hemorrhage and syncope.

In the discussion of the causes and reatment of fistula in ano de Chauliac is much behind John of Arderne—as, indeed, was every other surgeon of the contemporary two centuries.

Pleurisy, emphysema, and cancer come up next for discussion and treatment. Cancer is to be treated by excision, ligature, and the cautery, in a very brief discussion of what was virtually an incurable disease. De Chauliac described tracheotomy and the treatment for lachrymal fistula and polyps of the nose; the latter are caused by an excess of one or another humor in the nose which results in a moist polyp, a carcinomatous polyp, or an ulcer. The polyps should be excised with a small knife, and the patient should snuff wine into the nostril to help heal the wound. The treatment for cataract was as good as could be expected: the patient turns the affected eye toward the nose; the surgeon pierces the conjunctiva as far as possible from the cornea with a fine knife, and separates the lens from its suspensories. This procedure is still known as "*couching* the cataract." The displaced lens was left in the eye itself. Without effective anesthesia, the procedure was as heroic for the surgeon as it must have been for the patient. It must be remembered, nevertheless, that these were heroic days: a man with gangrene of the foot had his choice of certain death or the unanesthetized sawing-off of his leg. Where anesthetic surgery was unknown, the suffering of surgical pain was looked upon as a necessary but a not intolerable evil. The historian of medicine may well consider—and perhaps justly so—the present generation of patients as "soft."

In the *Compendium* there follows a long chapter on wounds of the head, and is succeeded by a chapter on trephination. Every kind of precaution must be taken before this operation is attempted. It was performed almost never except in cases of depressed fracture; then the trephination was made nearby (always avoiding the suture and the places of the fontanelles, for here are the blood-vessels which must be avoided), so that the depressed fragments could be elevated. The sinuses of the dura mater were to be avoided because suppuration entering them was extremely dangerous (and still de Chauliac, or whoever wrote this, would not learn the lessons of Theodoric and de Mondeville!) and because hemorrhage from them was exceedingly difficult to control. Still, the famous French surgeon (or the unknown writer) showed excellent knowledge of the skull and of the brain with its membranes and their blood-supply, as he showed excellent knowledge of the anatomy of the eye in his discussion of cataract. Perhaps he did not know the situation of the middle meningeal artery, but he did give directions for piercing the squame of the temporal bone to provide an escape for its bleeding after a fracture. In this chapter—Chapter XXXII—our author, said to be Guy de Chauliac, makes reference to "the celebrated Malpighi." De Chauliac died in 1368; Malpighi was born in 1628. It seems, then, that the *Chirurgia Parva*, if written at all by de Chauliac, was subjected to revision and addition by those who followed him, for at least three hundred years. But at least, if most of them remained anonymous—and on other grounds also—we have an insight into the immense bearing which de Chauliac had upon the surgeons of Europe, and we are justified in our statement, made before, that he was the most influential of the surgeons of France (and probably of Europe), although not the best. And at least we know that men during the time, perhaps even after the time, of Malpighi, still were practicing Early French Surgery. It was the best surgery that could be had, excepting only that of Ambroise Paré.

Bibliographic Note: Besides the definitive works (Quesnay, Nicaise, Riesman, and the rest), the author has used the complete writings of de Mondeville and de Chauliac in several early editions in French, Latin and Italian.

New Books

BOOKS RECEIVED

The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Pathology and Surgery of the Veins of the Lower Limbs. By Harold Dodd and Frank Cockett. Baltimore: The Williams & Wilkins Company, 1957. Pp. 462, illustrated.

Spinal Cord Compression. By I. M. Tarlov. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 147, with 41 illustrations.

Functional Bracing of the Upper Extremities. By Miles H. Anderson. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 463. Illustrated.

Principles of Internal Medicine. Edited by T. R. Harrison, Raymond D. Adams, Ivan L. Bennett, Jr., William H. Resnik, George W. Thorn and M. M. Wintrobe. New York: Blakiston Division, McGraw-Hill Book Company, Inc., 1958. 3d ed. Pp. 1782, with a 57-page index, 205 halftone illustrations and 5 color plates. *Reviewed in this issue.*

The Clinical Management of Varicose Veins. By David Woolfolk Barrow. New York: Paul B. Hoeber, 1957. Pp. 167, with 70 illustrations.

Homosexuality, Transvestism and Change of Sex. By Eugene de Savitsch. London: William Heinemann Medical Books Ltd.. 1958. Pp. 120.

The Management of Emergencies in Thoracic Surgery. By John Borrie. New York: Appleton-Century-Crofts, 1958. Pp. 340, with numerous illustrations.

The Physician's Own Library. By Mary Louise Marshall. Springfield, Ill.; Charles C Thomas, Publisher, 1957. Pp. 80.

Physical Examination of the Surgical Patient. By J. Englebert Dunthy and Thomas W. Botsford. Philadelphia: The W. B. Saunders Company, 1958. 2d ed. Pp. 375, with 203 illustrations.

On the Cerebrospinal Fluid in Normal Children and in Patients with Acute Abacterial Meningo-Encephalitis. By S. Widell. Lund, Sweden: Berlinyska Boktryckerict, 1958. Pp. 102, with 25 tables and 13 illustrations.

Pathologie Vasculaire des Membres (Vascular Pathology of the Extremities). By Pierre Wertheimer with the collaboration of J. Favre-Gilly and A. Lapras. Paris: Masson & Cie, 1958. Pp. 406, with 59 illustrations. *Reviewed in this issue.*

Lesions of the Lower Bowel. By Raymond J. Jackman. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 347, with endoscopic illustrations in color.

An Introduction to Surgery. Edited by David H. Patey. Chicago: The Year Book Publishers, 1958. Pp. 228, with 54 illustrations. *Reviewed in this issue.*

The Psychology of Medical Practice. By Marc H. Hollender. Philadelphia: The W. B. Saunders Company, 1958. Pp. 276.

BOOKS REVIEWED

Pathologie Vasculaire des Membres (Vascular Pathology of the Extremities). By Pierre Wertheimer with the collaboration of J. Favre-Gilly and A. Lapras. Paris: Masson & Cie, 1958. Pp. 406, with 59 illustrations.

This book is based on the authors' twenty-five year experience in the study of vascular diseases of the extremities. The importance of clinical instruction is emphasized. The essential points of Leriche's theory have been adopted in their treatment of vascular disorders based on anatomic structure of the arteries and veins, common physiologic action and pathologic effect in obliteration of vessels. The authors fully appreciate the rôle of vasoconstriction and spasm and the advantages of vasodilation therapy. They state that although, because of insufficient knowledge of the prophylaxis of obliterating venous disease, the primary cause is not properly handled, the sequelae of the disease are efficaciously treated.

by end-to-end anastomosis with or without grafting.

The fifth chapter considers, separately, the numerous types of arteritis and their clinical diagnosis. Etiologic theories (infectious, sympathetic and endocrine) are discussed. Much space is devoted to medical treatment. Surgical intervention includes periarterial and ganglionic sympathectomy; ablation of the thyroid, parathyroid or adrenal glands; correction of remaining obstructing thrombi; excision of the vessel, with or without grafting, and amputation for gangrene.

Chapter 6 discusses the causes, symptoms, anatomopathologic and physiopathologic pictures and diagnosis of arterial emboli. Medical treatment includes the use of antispasmodics, cardiotonics, anticoagulants, spinal anesthetics, freezing, etc. Embolectomy, arteriectomy, thromboendarteriectomy and their indications and results are carefully recorded.

[illegible]

thectomy, resection of the second, third and fourth thoracic ganglia, adrenalectomy or parathyroidectomy. The authors report excellent results in 18 patients with severe trophic disorders on whom sympathectomy was performed.

Chapter 9 takes up vasomotor syndromes of the upper extremities due to congenital anomaly of the supraclavicular fossa. Pathologic considerations include the rôle of anomalies—supernumerary upper rib, the scalenus anticus syndrome, etc. Types of operative correction, best accomplished by the anterior approach, include removal of the supernumerary rib, scalenotomy and liberation of the subclavian artery.

Chapter 10 is devoted to the classification of angiomas and contains excellent arteriographs.

Chapter 11 deals with the pathologic picture, symptoms, diagnosis and treatment of cirsoid aneurysm. Surgical correction includes simple ligation, extirpation, suppression of arteriovenous communication and amputation of the affected digit in case of trophic ulceration or severe hemorrhage.

Chapter 12 is a complete clinical study of freezing of the extremities. A most interesting historical note describes observations made during the Napoleonic, Crimean and First World Wars. The author stresses prophylactic treatment, particularly in military life. Therapy includes slow heating of frozen extremities, amputation for necrosed lesion, skin grafts, etc. In the early stages, infiltration of the sympathetic chain with procaine hydrochloride, injection into the arteries, and sympathectomy of the lumbar chain and periarterial sympathetic fibers are advised. Anticoagulant therapy and controlled hibernation (Laborit) are discussed.

Chapter 13 is devoted to varices of the lower extremities. The authors point out that this common affliction should not be regarded as a physical disgrace. It can be the source of many complications: permanent disability, reduced working capacity and incapacity for many occupations. Physiotherapy and medical treatment, injection of sclerosing substances and surgical treatment are discussed in detail.

Chapters 14 and 15 consider the sequelae of phlebitis due to medical, obstetric and surgical trauma and that due to strain. The lability, venous stasis, etc., are discussed. Treatment includes amelioration of venous stagnation by immobilization, with active exercise, modification of coagulability with heparin or Dicumarol, and ligation and control of reflex phenomena due to irritation of the vein.

The authors call attention to prophylactic measures against postoperative phlebitis. They emphasize the importance of careful surgical technic, avoidance of any interference in venous return flow by undue pressure on the abdomen; strict asepsis; gentle handling of the tissues and hemostasis. Postoperative measures include anticoagulation therapy and ligation of the femoral veins. Unfortunately the most effective measures, i.e., elevation of the foot of the bed, ambulation and exercise immediately after the operation, are not sufficiently stressed.

This book is well documented and contains many excellent photographs and arteriograms. There is an extensive bibliography, The pathologic descriptions of various vascular diseases of the extremities are complete. Physicians interested in the subject can profit by perusing this scholarly work.

CHARLES PIERRE MATHÉ, M.D.

An Introduction to Surgery. Edited by David H. Patey. Chicago: The Year Book Publishers, 1958. Pp. 228, with 54 illustrations.

This pocket-sized book was written primarily for the medical student who wishes to review quickly some basic and clinical material before starting his clinical duties. It consists of three main sections:

1. General Principles
2. Methods of Examination
3. Simple Practical Procedures.

A glossary of the more common surgical terms and an appendix of normal biologic and hematologic values are found at the end of the book.

Mr. Patey stresses the fact that the material is presented in an abbreviated form and that it is necessary for the student to consult the standard textbooks of his choice for further information concerning the case or cases under question. It is also advised that as ancillary texts the student should include a textbook of general pathology and a manual of first aid. A goodly amount of worthwhile material has been crammed into these pages. The book can be recommended.

PHILIP THOREK, M.D.

Principles of Internal Medicine. Edited by T. R. Harrison, Raymond D. Adams, Ivan L. Bennett, Jr., William H. Resnik, George W. Thorn and M. M. Wintrobe. New York: Blakiston Division, McGraw-Hill Book Company, Inc., 1958. 3d ed. Pp. 1782, with a 57-page index, 205 halftone illustrations and 5 color plates.

When this work first appeared in 1950, one of its stated purposes was "to provide for the medical student a certain unity between reading and instruction," with application of the basic sciences to clinical problems. It filled that need admirably, and was reissued in 1954.

of Specific Tissues and Anatomic Sites," has been added. A new chapter, "Heritable Disorders of Connective Tissue," is included, and there is a brief discussion of the more pertinent aspects of dermatology, since disorders of the skin are often intimately related to internal diseases.

Opening with a philosophic introduction of the physician to the patient, the authors take the young doctor through every phase and aspect of illness that brings the patient to his care. A whole section is devoted to pain, its physiologic and psychologic aspects, with emphasis upon diagnosis. Section headings indicate the scope and thoroughness with which the medical picture is presented: The Physician and the Patient; Cardinal Manifestations of Disease; Biologic Considerations; Metabolic and Endocrine Disorders; Disorders Due to Chemical and Physical Agents; Diseases Due to Biologic Agents; Diseases Associated with Reactions to Stress and to Antigenic Substances; Diseases of Organ Systems; Care of the Patient. An appendix is added under the heading "Laboratory Values of Clinical Importance." The index is highly detailed.

Abstracts from Current Literature

Surgery of the Thyroid Gland: Primary Operative Results in 1,732 Cases of Goitre. Lundgren, A., and Heimann, P., Acta Chir. Scandinav. 114:252 (March) 1958.

During the period from 1941 to 1956, the indications for surgical treatment of 1,732 patients with goiter were thyrotoxicosis in 1,121 instances, nontoxic goiter in 559 and malignant goiter in 22 (1.3 per cent)). Sixteen per cent of the patients in the series were men and 84 per cent were women. Roughly the same sex distribution was noted for toxic and nontoxic goiter, and for diffuse and nodular goiter. The group of patients with diffuse goiter was approximately of the same size as the one with the nodular form. Among the thyrotoxic patients the diffuse form of goiter predominated, while the nontoxic goiters were largely nodular. The malignant forms were distributed evenly between the nontoxic and the toxic goiters. This is of interest, since the view has been expressed in the literature that high-grade toxicity usually precludes malignancy.

Malignancy was verified histologically in 0.8 per cent of the cases. Nontoxic as well as diffuse goiters were common in the lower age group. The toxic forms and also the nodular type predominated in old patients, particularly in those over 60 years of age. Of the latter patients, 79 per cent belonged to the most toxic group.

All patients operated on for recurrences (59) were women, 39 of whom had toxic, 20 nontoxic, 35 nodular and 24 diffuse goiters.

The diagnosis of thyrotoxicosis was based upon the clinical features of toxicity and the basal metabolic rate, the boundary being drawn at about 20 per cent. Severe mechanical symptoms, consisting in tracheal compression or displacement, occurred in one-sixth of the series (in two-fifths of the cases of nodular goiter).

The surgical methods employed were enucleation (60) for solitary adenoma, unilateral subtotal resection (212) for unilateral involvement, and bilateral subtotal thyroidectomy (1,460) for the remainder. At every resection, the superior thyroid vessels were ligated as far as possible above their entrance into the gland in order not to tie off thyroid tissue, which may lead to slipping and secondary hemorrhage. Usually, the inferior thyroid arteries were also ligated to diminish the danger of recurrence. The procedure necessitates exposure of the entire gland. The recurrent laryngeal nerve, however, was not freed. This did not lead to a higher incidence of complications such as recurrent laryngeal palsy and tetany.

Local anesthesia was applied without complications in every instance by superficial infiltration of the skin and muscles preoperatively, and at greater depth at operation under visual control.

The primary operative mortality rate for the whole series was 0.3 per cent. Among the benign goiters it was 0.2 per cent, of which the nontoxic group accounted for none and the toxic for 0.4 per cent. The deaths all occurred in cases of highly toxic nodular goiter, cardiac decompensation and severe mechanical symptoms in patients of advanced age.

Operative complications were fairly rare. They consisted in glottic spasm (0.5 per cent), postoperative hemorrhage (0.6 per cent), toxic crisis (0.4 per cent of the toxic goiters), tetany (0.6 per cent) and recurrent laryngeal palsy (3.3 per cent).

ERNEST G. ABRAHAM, M.D.

Predictive Value of the Positive Vaginal Smear. McLennan, M. T., and McLennan, C. E., J. Surg. Gynec. & Obst. 66:258, 1958.

In two years 15,600 cytologic smears from 11,711 women were examined. The vaginal smears of 165 women not previously known to have carcinoma gave positive results.

Carcinoma was demonstrated by tissue examination in 109 of the cases in which positive results were obtained, but 47 of the women with positive smears did not appear to have carcinoma. In the remaining 9 instances, follow-up information was incomplete. Thus, the incidence of proved carcinoma in the entire group of 11,711 women subjected to screening was 0.93 per cent.

Positive smears from patients who did not prove to have carcinoma were often associated with vaginal or cervical infections, basal cell hyperplasia of the cervix, atrophic epithelia and cervical or endometrial polyps.

The value of maintaining a high index of suspicion in the interpretation of vaginal smears is stressed in this study.

EDMUND LISSACK, M.D.

Total Body Cooling in Critically Ill Febrile Patients. Reeves, M., and Lewis, F. J., Surgery 44: 84, 1958.

The authors describe the method and results of total body cooling with a refrigeration machine to the level of 35 to 36 degrees of 26 critically ill febrile patients divided into two groups (control and cooled) ranging from 4 to 81 years of age, each having an oral temperature of at least 104 F., a pulse rate above 120 and a respiration rate above 24. The method appeared to the authors to be an effective adjunct to therapy. There was no deleterious effect, especially in cases of injury to the head.

graft; (3) fresh autogenous arterial graft, and (4) nylon mesh tubes.

Frozen dried preparations were more resistant to stricture formation than were the other two arterial preparations. The nylon tubes were not incorporated as part of the duct wall, although they permitted the formation of a surrounding new duct. In general, it may be said that the methods were not satisfactory for application to man.

JAMES H. ERWIN, M.D.

New Technics in the Study of Carcinoma of the Uterine Cervix. Denham, S. W., and Foraker, A. G. J., Florida M. A. 44:1089, 1958.

These authors, in studying carcinoma of the cervix under a new approach, have found that this has not been done before.

Their histochemical technics indicate that the chemical properties of the cells parallel their microscopic appearance and their growth potential; that there is a gradual transition from normal mucosa to metaplastic epithelium to a typical hyperplastic epithelium to intraepithelial carcinoma to invasive squamous cell carcinoma.

Newer technics and methods will grow from this understanding of the cervical epithelium in its various situations [illegible] related to carcinoma.

EDMUND LISSACK, M.D.

A Report of 549 Cases of Breast Cancer in Women 35 Years of Age or Younger. Treves, N., and Holleb, A. I., Surg., Gynec. & Obst. 107:271, 1958.

An analysis has been made of 549 patients with histologically confirmed carcinoma of the breast. All were 35 years of age or younger. The following conclusions are based on a study of patients seen at Memorial Center from 1937 through 1949. More than three-fourths of the patients reported no familial history of carcinoma of any type. When carcinoma had been present in the family, the breast was involved in 35 per cent of cases, one-half of the patients reporting its occurrence in a mother and almost one-fourth in a sister. Eighty-two per cent of the patients were married, and 66 per cent had been pregnant at least once. The incidence of surgical gynecologic disorders appeared to be relatively high for this young age group. In 92 per cent of cases the patient had discovered a mass in the breast without medical assistance. In only 1 per cent was the tumor discovered during routine physical examination. Nipple discharge was present in 5.5 per cent, bloody discharge occurring twice as frequently as serous. Bloody discharge more often indicated an infiltrating duct carcinoma with no papillary component.

Infiltrating duct carcinoma accounted for 86.6 per cent of the pathologic diagnoses. Other histologic types were in the minority.

The minimum five-year clinical cure rate, based on total experience, was 30.7 per cent. When selection was made in terms of operability, the five-year clinical cure rate was 37.7 per cent. Further selection, i.e., exclusion of patients who died of other causes, were lost to follow-up without evidence of recurrent carcinoma, or refused treatment, yielded a maximum rate of 40.6 per cent. These data and a review of the literature indicate that the carcinoma of the breast in the young woman offers a prognosis equal to that which applies to an older woman.

When the axillary nodes were involved, the clinical cure rate was lower than that for older women, which suggests that the disease may be more lethal when regional metastases have occurred in the young patient.

In this series, the specific location of the tumor within the breast had little or no influence on the rate of clinical cure.

The authors express the opinion that one cannot predict the results of treatment for any specific age below 35 years on the basis of age alone.

Lesions of the outer quadrant showed a higher frequency of metastases to the axillary nodes than did those arising in the inner quadrants, yet the five-year clinical cure rate was essentially the same whether the tumor was located in the inner or the outer half of the breast. When the axillary nodes were not involved, carcinomas located in the outer half of the breast had a clinical cure rate, 8 per cent better than the rate for lesions of the inner half, the midline, and the central area combined.

The prognosis was better for those patients with the less common type of mammary carcinoma, e.g., medullary, comedo carcinoma and colloid carcinoma, than for those with infiltrating duct carcinoma. The incidence of metastasis to the axillary nodes was likewise lower. Infiltrating duct carcinoma, Grade 2, showed a lower incidence of such metastases and a higher clinical cure rate than did the same tumor, Grade 3. The higher the level of axillary node involvement, the poorer the prognosis. Involvement of Level 3, however, should not be used as a criterion of inoperability, since 16 per cent of these patients were free of recurrent carcinoma five years or more after radical mastectomy.

Although pregnancy occurring simultaneously with carcinoma of the breast has an extremely poor prognosis, the pregnancy should not be utilized as a criterion of inoperability. Pregnancy occurring at some time subsequent to surgical therapy for mammary carcinoma appeared to have little influence on the prognosis. Definite conclusions concerning the management of pregnancy for women with concurrent carcinoma of the breast cannot be formulated, nor can any recommendations be made with regard to the management for the woman who has been treated previously for carcinoma of the breast.

Patients who delayed longer than six months before seeking surgical treatment showed a higher incidence of axillary node metastases and a lower clinical cure rate than did patients who sought medical care earlier.

Postoperative roentgen therapy, regardless of axillary node involvement, had no influence on the clinical cure rate.

The median duration of life for patients considered clinical failures was slightly over two years. More than two-thirds had died by the end of the third year.

There were no postoperative deaths among 399 patients treated by radical mastectomy.

When the axillary nodes were uninvolved, prophylactic castration did not affect the clinical cure rates. When axillary nodes were involved, the five-year clinical cure rate was 8.3 per cent higher in those patients who were castrated prophylactically.

No comparison could be made between the effectiveness of surgical castration and that of pelvic irradiation. The median duration of survival after therapeutic castration for metastatic carcinoma of the breast was 9 months.

Prophylactic simple mastectomy is not recommended even in the presence of a significant familial history of mammary carcinoma.

The incidence of axillary node metastasis increased proportionately with the size of the tumor. The five-year clinical cure rate diminished as the size of the tumor increased. Tumor size alone was significant in prognostic import, whether the axillary nodes were involved or free of metastases.

On the basis of these studies the authors suggest that certain stringent criteria of operability, which in the past have been given fairly wide attention, be modified. Even young women with axillary node metastases at the highest level have a 16 per cent chance for five-year clinical cure. Early diagnosis and prompt radical operation offer the best chance of survival. When the primary lesion is small and still localized to the breast, the maximum opportunity for five-year clinical cure exists. Tumors occurring in the breast during pregnancy should be diagnosed and treated immediately. Earlier impressions of the poor prognosis of this lesion in the young woman who is not concurrently pregnant must be supplanted by a more hopeful outlook.

[illegible] A. [illegible] M.D.

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles *scientifiques destinés à être publiés dans le* Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
Collège international de chirurgiens
6-8 rue de la Confédération
Genéve (Suisse)

Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

The Journal of the International College of Surgeons

Vol. 31, No. 2 SECTION II February, 1959

BULLETIN

Embodying Activities of the World Federation of General Surgeons and Surgical Specialists, Section News and Comments

Editor-in-Chief—Max Thorek, M.D.
Associate Editor—Philip Thorek, M.D.
Consulting Editor—Morris Fishbein, M.D.
Assistant Editors—Dorothy Langley and Helen Weiss

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CONTENTS

Page

People and Places to Remember 4

Third Around-the-World Postgraduate Refresher Clinic Tour............. 5
Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., Madison, Wisconsin

Comments by the Founder: Mission With Pleasure........................ 27

From the Executive Director's Notebook.................................. 33

UNITED STATES SECTION
The President's Message 35
Southeastern Regional Assembly 36
Woman's Auxiliary
The President's Message 37
Report from Mrs. William G. [illegible] 38

THIRD LECTURE SERIES

1958-1959

School of the History of Surgery and Related Sciences
International Surgeons' Hall of Fame
1524 Lake Shore Drive, Chicago

LECTURES BEGIN AT 8:00 P.M.

OCTOBER 21, 1958 . . . . *"Changing Concepts of Disease"—Dr. Ilza Veith, Associate Professor in the History of Medicine, Department of Medicine, University of Chicago, Chicago, Illinois*

NOVEMBER 11, 1958 . . . . *"Epochs in the History of Medicine"—Dr. Morris Fishbein, Professor Emeritus of Medicine, University of Chicago and University of Illinois, Chicago, Illinois*

DECEMBER 2, 1958 . . . . *"The History of Hospitals"—Dr. Charles U. Letourneau, Director, Program in Hospital Administration, Northwestern University, Chicago, Illinois*

JANUARY 13, 1959 . . . . *"The History of Gynecology"—Dr. A. F. Lash, Clinical Professor of Obstetrics and Gynecology, University of Illinois, Chicago, Illinois*

FEBRUARY 3, 1959 . . . . *"The History of Neurosurgery"—Dr. Percival Bailey, Distinguished Professor of Neurology and Neurological Surgery, University of Illinois, Chicago, Illinois*

FEBRUARY 24, 1959 . . . *"Notes About the Role of Physicians in Our Military History"—Dr. George S. Lull, Assistant to the President, American Medical Association, Chicago, Illinois*

MARCH 24, 1959 . . . . . *"Evolution of Medical Illustration"—Thomas S. Jones, M.S., Emeritus Professor of Medical and Dental Illustration, University of Illinois, Chicago, Illinois*

APRIL 14, 1959 . . . . . . *"The History of Surgery of Bones and Joints"—Dr. Edward L. Compere, Professor and Chairman of the Department of Orthopedic Surgery, Northwestern University and Chicago Wesley Memorial Hospital, Chicago, Illinois*

MAY 5, 1959 . . . . *"The Evolution of Otorhinolaryngology and Bronchoesophagology" — Dr. Francis L. Lederer, Professor and Head of Department of Otolaryngology, University of Illinois, Chicago, Illinois*

MAY 21, 1959 . . . . . . *"The History of Plastic Surgery"—Dr. Wayne B. Slaughter, Clinical Professor in Charge of Plastic Surgery, University of Wisconsin (Madison) and Stritch School of Medicine, Loyola University, Chicago, Illinois*

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

May 21-22 Huntsville, Alabama	Alabama Surgical Section U. S. Section, International College of Surgeons
May 28-30 Kiamesha Lake New York	New York State Annual Meeting U. S. Section, International College of Surgeons
June 1-3 Hamburg, Germany	German Section and German-Speaking Sections, European Federation International College of Surgeons
June 19-21 Lyons, France	French Section International College of Surgeons
September Santos, Brazil	Brazilian Section International College of Surgeons
September 28 Chattanooga Tennessee	Tennessee Valley Medical Assembly U. S. Section, International College of Surgeons

MIDSUMMER POSTGRADUATE TOUR OF EUROPEAN COUNTRIES INCLUDING RUSSIA

July-August, 1959

Dr. Ross T. McIntire, Coordinator

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation

(Canada, Mexico, U. S. and Central American Sections)

International College of Surgeons

SEPTEMBER 13-17 CHICAGO, ILLINOIS

1960

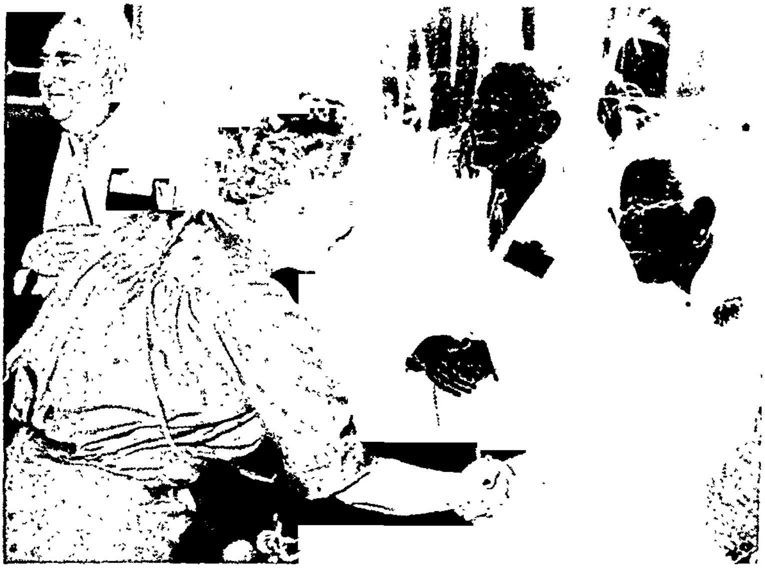
TWELFTH BIENNIAL INTERNATIONAL CONGRESS

International College of Surgeons

MAY 15-18 ROME, ITALY

People and Places To Remember

Third Around-the-World Tour



Above: Prof. Dr. Nicholas C. Louros, F.I.C.S. (Hon.), president of the Greek Section of the International College of Surgeons, Mrs. James Riddelberger and the Honorable James Riddelberger, United States Ambassador to Greece

Right: Dr. Arthur Woo, F.R.C.S. (Eng.), F.A.C.S., F.I.C.S. (Hon.), president of the China — Hong Kong Section of the International College of Surgeons, and Mrs. Woo greeting Mrs. Harold E. Simon of Birmingham, Alabama, and Capt. L. L. Bean, M.C., U.S.N., F.I.C.S.

Below: Demonstration of Surgery at Prof. Dr. Komei Nakayama's Surgical Clinic, Chiba University, Chiba, Japan

Around-the-World Postgraduate Tour

ARNOLD S. JACKSON M.D., F.A.C.S., F.I.C.S.
Former President, United States Section
INTERNATIONAL COLLEGE OF SURGEONS

The foresight of Dr. Max Thorek, founder of the International College of Surgeons, its Hall of Fame and its School of the History of Surgery and Related Sciences, was rounded out by his inauguration of the Around-the-World Postgraduate Refresher Clinic Tour.

The first tour was so successful an innovation that other tours were bound to follow and to increase in importance.

Each tour is headed by a coordinator, whose duty it is to facilitate scientific and educational procedures, such as the presentation of papers. The coordinator of the first tour was Dr. Thorek himself, and Dr. Neal Owens headed the second tour. It was my privilege to be the coordinator of this one.

I can depict only sketchily the tremendous success of this third Around-the-World trip. I touch only on the highlights. I cannot fully express the entire impact of the trip on the participants. All are agreed that it was a journey such as none of them had ever before been privileged to make, a unique experience, rewarding in the extreme, to each of [illegible] surgeons who traveled in [illegible]

Dr. Ralph B. Cloward

Dr. Arnold S. Jackson

No tour ever began more auspiciously than did the Third Around-the-World Postgraduate Refresher Clinic Tour, sponsored by the United States Section of the International College of Surgeons.

A group of twenty-eight surgeons, some accompanied by their wives, departed either from San Francisco or from Los Angeles on Friday, October 10, and assembled the following day at the Royal Hawaiian Hotel in Honolulu.

Four delightful days in Hawaii [illegible] nity to observe local customs, eat native food in native fashion—eschewing knives and forks—and enjoy true Hawaiian music and dancing.

The long flight to Japan was uneventful. The plane stopped at Wake Island to refuel, giving us a chance to debark for a little exercise and refreshment. By that time, of course, we, who had been moving ever westward and steadily gaining time, had crossed the International Date Line and paid the toll of a whole day lost.

Japan

Prof. Dr. Hiroshige Shiota, F.I.C.S. (Hon.), president of the Japanese Section of the International College of Surgeons

We arrived at the Tokyo airport at ten in the morning of Wednesday, October 15. Even at that hour, with the exquisitely courteous hospitality which was to characterize our stay in Japan and, in various forms, accompany us through country after country wherever Fellows of the College were to be found, we were met by welcoming friends, among whom were **Drs. Nagasaki and Sato,** both of whom had trained at the Jackson Clinic in Madison.

We went at once to the famous Imperial Hotel, designed by the great architect, **Frank Lloyd Wright,** and were soon comfortably located in the new annex. That evening, **Prof. Komei Nakayama,** professor of surgery at the University of Chiba and secretary of the Japanese Section of the International College of Surgeons, and **Mrs. Nakayama** came to Tokyo to greet the group personally. Later they took some of the group to a private club for dinner and entertainment.

The following morning we started on our medical missions. Some went to the University Hospital to observe **Dr. Seiji Kimoto,** F.I.C.S., professor of surgery at the Tokyo University Medical School, who operated upon two heart cases: the first an intra-atrial defect and the second a mitral stenosis. Others went to the Tokyo Women's Medical College Hospital, where another outstanding cardiac surgeon, **Dr. Shigeru Sakakibara,** F.I.C.S., professor of surgery at the Tokyo Women's Medical College, with his associates, also presented a brilliant demonstration of surgical skill.

In Tokyo the tour was joined by **Capt. L. L. Bean,** M.C., U.S.N., F.I.C.S., who is engaged in naval medical work in Sasebo, Japan, and **Capt. Elson Swanson,** M.C., U.S.N., F.I.C.S., who is stationed at the U. S. Naval Hospital at Yokosuka, Japan,

Prof. Dr. Masao Tsuzuki, vice-president of the Japanese Section of the International College of Surgeons

Prof. Dr. Shigeru Sakakibara
F.I.C.S.

Prof. Dr. Komei Nakayama
F.I.C.S.

Prof. Dr. Shigetsugu Katsura
F.I.C.S.

as head of the ENT Department. Captain Bean was able to participate in the sessions of the tour in Japan, Hong Kong and Thailand. He continued on to India, but time ran out and he had to return to his work in Sasebo before the scientific sessions there took place. Captain Swanson's time too was limited, as was his stay with the group.

The scientific session held jointly by the touring surgeons and members of the Japanese Section of the International College of Surgeons took place on Saturday, October 17. The opening address was made by **Dr. Curtice Rosser**, of Dallas, Texas, immediate past president of the United States Section. **Dr. Winchell McK. Craig**, F.A.C.S., F.I.C.S., of the Mayo Clinic, and I presented papers, which, having previously been translated into Japanese, were readily understood and greatly appreciated. **Dr. Finis Cooper**, F.A.C.S., F.I.C.S., of Huntington Park, California, showed an interesting film on large [illegible] tinued good health, cheered them and saluted them in song.

That afternoon the entire party attended the twenty-fourth annual performance of *Autumn Dance,* a beautiful musical extravaganza.

The following day we went by bus to Chiba, twenty-five miles from Tokyo, home of Prof. and Mrs. Komei Nakayama and site of the University of Chiba, where Prof. Nakayama is surgical director of the medical school hospital.

No one present will ever forget this long anticipated surgical clinic. Prof. Nakayama is one of the most dexterous and rapid surgeons in the world. The first operation consisted of a partial resection of the esophagus, a total gastrectomy, a partial hepatectomy and a splenectomy, with anastomosis of the pyloric end of the stomach to the esophagus, for an advanced case of malignancy. The operation was completed in eighty minutes, and was followed by several Billroth I gastrectomies, each performed in a half hour or less, in all a list of seven major procedures. Greatly facilitating these procedures were Dr. Nakayama's own non-crushing clamp for liver resection and his modification of the DePetz stomach.

> *When first apprized of Prof. Nakayama's extraordinary skill, surgeons tend to be skeptical, but all doubt is dissipated when they are confronted with the surgical performance of this gifted master. During the past few years Prof. Nakayama has demonstrated his dexterity at various surgical centers both in Europe and in the United States.*
>
> Editor

Unfatigued at the end of this performance, Dr. Nakayama conducted the group on his ward rounds, where twenty-nine postoperative stomach cases were shown.

Meanwhile, the ladies of the party had been graciously entertained by Mrs. Nakayama at her home and at nearby places of interest.

That evening Prof. and Mrs. Nakayama entertained us at a characteristically Japanese dinner, the cuisine, service and entertainment being both native and superlative in quality.

The next morning we took off on a six-hundred mile tour into the interior, viewing the fabled shrines, waterfalls, cloud-crowned mountains, graceful bridges

Reception committee, officers of the Japanese Section of the International College of Surgeons and essayists at the scientific session in Tokyo, October 17, 1958

Social hour with Japanese friends

and beautiful autumn-colored trees of Japan. We beheld Mt. Fuji. We watched a great festival parade at the Heian shrine and the Old Imperial Palace. And above all we enjoyed the beautiful Japanese country-side with its neat vegetable gardens, rice fields and tea plantations.

Upon our return to Tokyo, we held a farewell breakfast for Prof. and Mrs. Nakayama to express our whole-hearted appreciation of their generous hospitality.

It had been such a happy ten-day visit that we left Japan reluctantly, each one pledged to return soon and stay a longer time. Among the souvenirs most valued were the handsome badges, blue enamel on a gold background, picturing Mt. Fuji, which were designed by Dr. Nakayama and presented to the guests at the scientific session.

In the evening, the Fellows of the China — Hong Kong Section were hosts at a many-coursed dinner of wonderful Chinese food at the bright new *Floating Palace,* which even some of the hosts had not yet seen.

After *that* dinner, the following morning we breakfasted, if at all, on tea and toast, but we managed to lunch magnificently at the pent-house *Cafe de Chine.* In the afternoon we took tea with Mrs. Aw Boon Haw and her daughter at their famous home, the Haw Par Mansion, and were shown its rare collection of jade and pink quartz, second only to that of the Metropolitan Museum.

That evening (Monday, October 27) the China—Hong Kong Section of the College had us to dinner at the Hong Kong University Alumni Association clubhouse. This was followed by a scientific session, during which Drs. Curtice Rosser, Finis Cooper and I presented papers before an audience of medical men which cr
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F.I.C.S., of the Tung Wah Hospital, an eminent surgeon and a former president of the China—Hong Kong Section of the College.

On the morning of Tuesday, October 28, I had the privilege of being conducted by **Dr. "Sandy" Lin,** a graduate of Johns Hopkins Medical School and a prominent ENT specialist, through the one-thousand-bed Queen Mary Hospital, and there addressing an audience of a hundred and seventy-five members of the faculty and student body of the medical school of the University on *Diseases of the Thyroid.* **Prof. F. E. Stock,** dean of the medical faculty, presided over the session, and **Dr. Kenneth H. L. Hui, F.A.C.S., F.I.C.S.,** formerly secretary of the China—Hong Kong Section of the College and now a member of its ex-
council, introduced me. Dr. Hui
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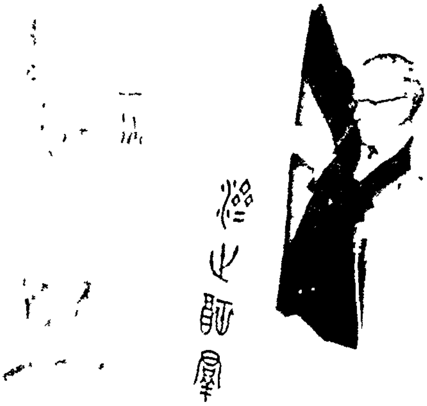

The Honorable D.
Rosser and Jackso
the College,

On a sightseeing excursion, our travelers and their hosts, the officers of the China—Hong Kong Section, including Dr. Arthur Woo and Dr. Roy Mar, accompanied by their wives

Dr. Woo presented us with a handsome Chinese scroll for the College, and gave to each lady an ivory fan and to each doctor his name plate in Chinese as mementos of the occasion from the China—Hong Kong Section.

The dinner party ended with professional entertainment that was augmented by "audience participation."

Hong Kong is a fascinating city, and the entire stay there was most pleasurable. The harbor buzzes with activity. The shops are enticing. One day the group took a fifty-six mile drive into the interior of China and approached to within three miles of the Red border. The refugees from Communist China have swelled the population of Hong Kong from a half million to nearly two and a half million.

One evening some of us had dinner on the veranda of the Hotel Carlton high above the city. The moon was full, and far below the myriad lights of the city and of the ships wove a gleaming tapestry.

We shall never forget Hong Kong and our good friends of the China — Hong Kong Section of the International College of Surgeons.

The Philippines

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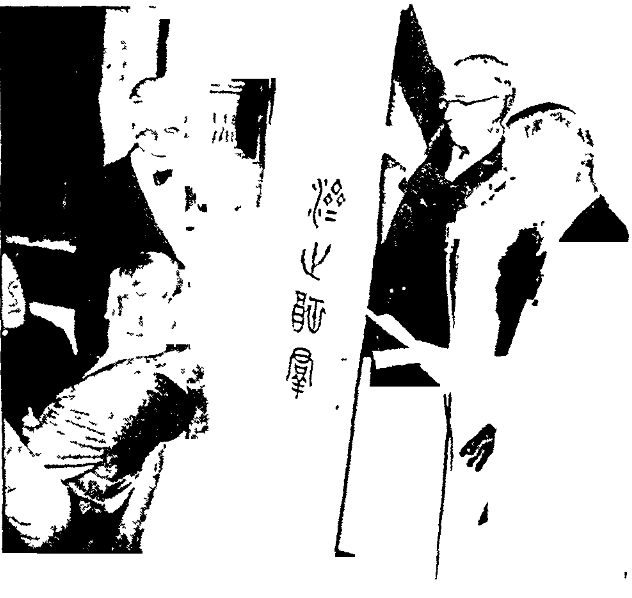

The Honorable D. J. Mackenzie, Drs. Craig, Rosser and Jackson, the Chinese scroll, gift to the College, and Dr. Arthur Woo

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In the afternoon we all took a trip to Repulse Bay and had tea at the Eucliff, a fabulous castle of medieval design, which is part of the estate of the late Mr. Eu Tong Sen.

A formal banquet was held that evening at the Banker's Club. Many notable guests were present, a considerable number of them accompanied by their ladies.

Dr. Arthur Woo presided. Among the speakers were the **Hon. D. J. M. Mackenzie**, director of the Medical and Health Services; **Prof. F. E. Stock**, dean of the Medical Faculty of the Hong Kong University; **Dr. James Cook**, Chief Government Surgeon; **Col. V. C. Verbi**, president of the Hong Kong Chapter of the British Medical Association and director of the Army Medical Services, and **Dr. K. D. Ling**, president of the Hong Kong Chinese Medical Association. Drs. Curtice Rosser, Winchell McK. Craig, Finis Cooper and I spoke for the United States Section.

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Table at banquet: seated, left to right, Dr. Constante A. de Castro, Dr. Januario Y. Estrada, Jr., Mrs W. W. Babcock, Dr. H. E. Simon, Dr. Rodrigo L. Gabuya, Mrs. Simon, Dr. Rodolf P. Guzman, and Natividad Z. Pangan

both of whom had trained at Mayo's, we planted a tree at the new Diagnostic Center Clinic.

Sunday morning, November 2, **Dr. Porifiro M. Recio**, F.I.C.S., who had served as assistant to **Dr. Harry E. Bacon**, F.A.C.S., F.I.C.S. (Hon.), of Philadelphia, president-elect of the United States Section of the College, together with several other Fellows of the Philippine Section and their wives, took us on an enjoyable drive to see the new suburban area and the University, and then on to Tagaytay Ridge to view volcanic Teal Lake.

At a charming spot, we lunched on many intriguing delicacies.

That evening we were invited to the Elpo Compound, the estate of **Dr. Jose Y. Fores**, president of the Philippine Section of the International College of Surgeons, and his family. In a beautiful enclosed compound beside an attractive swimming pool, we enjoyed a wonderful dinner. It was a very happy get-acquainted party.

The scientific meeting was held on Monday, November 3, at eight-thirty in the morning, in the auditorium of the Faculty of Medicine and Surgery of the University of Santo Tomas. This is a magnificent new air-conditioned auditorium seating twelve hundred and fifty persons. The place was packed to the point that only standing room was available!

The meeting was sponsored by the **Philippine Section** of the **International College of Surgeons** and the **Philippine College of Surgeons**, with the cooperation of the **Philippine Medical Association**, the **Philippine Federation of Private Practitioners**, the **U. S. T. Medical Association**, the **Manila Medical Society**, the **Philippine Women's Medical Association**, the **Philippine Orthopedic Society**, the **Philippine Obstetrical and Gynecological Society**, the **Philippine Urological Society**, the **Philippine Association of Military Surgeons**, the **Philippine Neurological Society**, the **Pasay Medical Society**, the **Rizal Medical Society**, the **Philippine Society of Otolaryngology and Bronchoesophagology**, the **Philippine College of Physicians** and the **Quezon City Medical Society**.

Special thanks are due to the officers and faculty of the **University of Santo Tomas**, and particularly to the **Reverend Fr. Rector Magnificus**, for the privilege of using the University facilities and for the cooperation which made the meeting an outstanding event.

The program was excellent. **The Rev. Father Jesus Diaz, O.P.**, regent of the faculty of medicine and surgery, gave the invocation, and **Dr. Virgillo Ramos**, dean of the faculty, delivered the welcoming address. The scientific meeting was opened by **Dr. Jose Y. Fores.**

The American surgeons who took part in the program were: Dr. Winchell McK. Craig, Dr. Curtice Rosser, Dr. Herbert Hayes, Dr. Finis Cooper, and I.

Dr. Francisco Guzman, F.A.C.S., F.I.C.S., president of the Philippine College of Surgeons, made the closing address.

As visiting surgeons, we were invited to tour the school and were interested to learn that one-third of the students were women. The dean said they could not be kept out; they got the best marks.

We were entertained at lunch at the Spanish Club, where delicious steaks imported from Argentina were served.

And that evening there was the banquet!

The banquet, presided over by **General Basilio J. Valdes**, former secretary-treasurer of the Philippine Section of the International College of Surgeons, was the closing formal event of the stay in Manila. It was extraordinarily festive and gay. It closed with community singing, particularly with the rendition of the two national anthems and with some improvised entertainment which provided merriment and further cemented in a light spirit the ties that earlier had been formed through serious scientific conferences.

We left Manila with warmest feelings of friendship for our colleagues of the Philippine Section. We shall always remain indebted to Dr. Fores and the other officers of the Section for their hospitality. Particular thanks are due to **Dr. Angel I. Reyes**, secretary-treasurer of the Section, who did so much and so well to facilitate arrangements for scientific and other meetings.

Together with several other American surgeons, I was privileged to have an interview with the **Hon. Charles E. Bohlen**, United States Ambassador to the Philippines, an experience for which we are very grateful.

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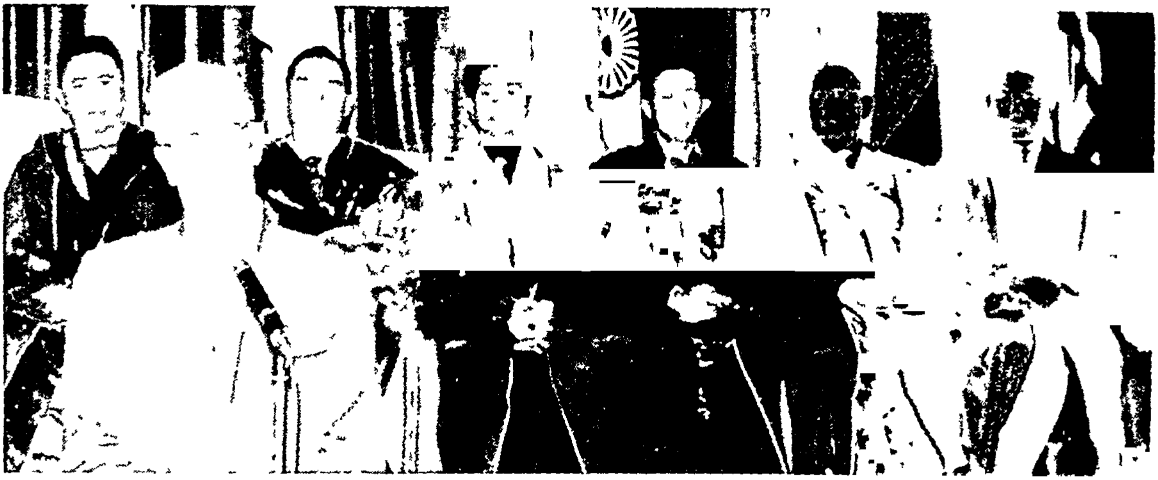


Dr. Jackson addressing scientific session of the Thailand Section of the International College of Surgeons in Bangkok

Thailand

Pan American speeded us from Manila to Bangkok. But en route, over Cambodia, northwest of Tonle Sap, the plane was lowered and slowly circled over the lost city of Angkor. Angkor Thom was the old capital of the Khmers, and together with Angkor Wat, the temple, which is about a mile to the south, dates back approximately a thousand years. Abandoned some centuries later, both the city and the temple have been "lost" in the encroaching forest. But from the plane we had an excellent view of the magnificent structures which marked the zenith of Khmer civilization.

We arrived at Bangkok on Wednesday, November 4, and were met at the Don Muang Air Port by **Air Vice Marshal Chua Punsoni**, RTAF (MC), M.D., president of the Thai Section of the International College of Surgeons; **Lt. Col. Nitya P. Vejjavisit**, M.D., former president, and **Dr. Sem Pring-puang-geo**, the very thoughtful and capable secretary of the Section. Through the courtesy of the Royal Thai Air Force, we were received in a special guest room and then were driven to the Oriental Hotel for tea.

That evening the Thai Section held a reception and cocktail party on the lawn along the river adjoining the hotel and we had the honor of meeting not only the United States Ambassador to Thailand, **Mr. Alexis Johnson**, and **Mrs. Johnson** but also many Thai dignitaries, including the Under-Secretary of State for Public Health, **Dr. Luang Bimbakya Bidyabhed**, C.R., F.I.C.S. (Hon.).

The next morning we were taken by bus to the Priest Hospital Auditorium for a scientific meeting, the admirable arrangements for which had been made by **Dr. Viraj Makaduang Keo**, director of the Priest Hospital, and his staff.

Air Vice Marshal Chua Punsoni opened the meeting, and Under-Secretary of State Luang Binbakya Bidyabhed welcomed the American guests officially to Thailand. We were delighted to be present at the ensuing ceremony, when the Under-Secretary of State presented the International College of Surgeons' emblematic shields of honor to Air Vice-Marshal Chua Punsoni and to Lt. Col. Nitya Vejjavisit for their distinguished service to the College, to surgery and to the welfare of Thailand.

Officers of the Thailand Section of the International College of Surgeons and participants in the scientific session

We also were happy to witness the induction of the newly elected officers of the Thai Section of the College for the year 1959-1960. These are:

Maj. Gen. Sanguan Rojanavongse, M.D., D.Sc., F.R.F.P.S.G., F.I.C.S.
PRESIDENT

Prof. Daeng Kanchanaranya, M.D., D.Sc., F.I.C.S.
VICE-PRESIDENT and PRESIDENT-ELECT

Major Bulsak Vadhanabhasuk, M.D., F.I.C.S.
TREASURER

Dr. Sem Pring-puang-geo, F.I.C.S.
SECRETARY

been made for the visitors and we were served most graciously by the students.

Maj. Gen. Sanguan Rojanavongse, the newly inducted president, was chairman of the afternoon session. Out of courtesy to the visitors, papers were read in English. The essayists and their presentations were:

Tinrat Stitnimankarn, M.D., F.I.C.S.: *Incidence of Thyroiditis in Thailand*

Samran Wangspa, M.D.: *Cysticercus in Anterior Chamber of the Eye*

Kobchai Prommindaroj, M.D., F.I.C.S., and **Sunit Chermsiriwatana**, M.D., D.T.M.: *Sturge-Weber Syndrome*

Air Commodore Sadab Dhiraputra, RTAF (MC), M.D., F.I.C.S.: *Perforation of the Eardrum*

Kampee Mallikamas, M.D., F.I.C.S.: **Southam Tappawongse**, M.D., and **Niyom Towong**, M.D.: *Liver Biopsy by Vim's Needle*

Dr. Luang Binbakya Bidyabhed

to the President of the United States, and to Dr. Max Thorek, the founder of the International College of Surgeons. Very interesting and pleasing entertainment was provided by the Royal Fine Arts Department and the student nurses at the hospital. Later the singing became general, with American and Thai songs alternating, giving spontaneous expression to the good will engendered by international scientific cooperation and friendly sociability.

During the afternoon, local Canadian, American and Thai ladies served as guides and companions to the ladies of the party on a tour which offered an opportunity for shopping for the exquisite products of Thai crafts.

The following day, Thursday, November 6, was devoted to sightseeing. A morning trip by motor launch on the Chao Phya Menam River gave us an exceptional opportunity to observe the life of Thailand. The floating markets were fascinating.

In the afternoon we drove to several places of interest, including the Royal Palace grounds and the Court of a Thousand Buddhas.

That evening Lt. Col. Nitya Vejjavisit entertained us at a magnificent buffet dinner party for two hundred at his home. It was informal and gay, with music and dancing, and an evening long to remember.

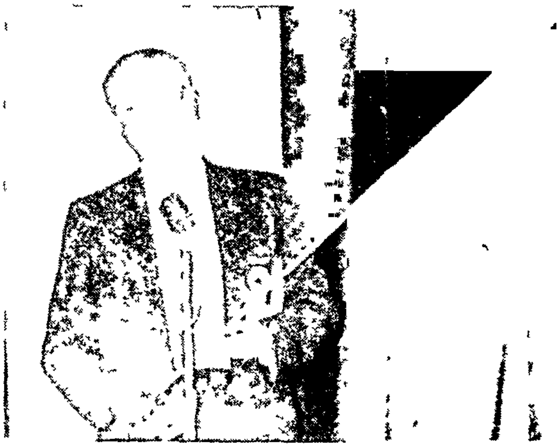
The following day we regretfully left Bangkok. We shall always recall with nostalgia the days spent in enchanting Thailand with the friendly members of the Thai Section of the International College of Surgeons. The two hospitals which we had an opportunity of observing closely, the Priest Hospital and the Women's Hospital, are modern and well organized and doing excellent work. The stay in Thailand was highly satisfying both as a scientific and as a social experience.

Some of the touring surgeons had the privilege of taking breakfast together with Dr. Virgil T. DeVault, F.A.C.S., F.I.C.S., who has charge of the health of twenty-five thousand Americans in the State Department throughout the world, and is one of the most enthusiastic members of our College.

Arrival in Bangkok and reception at the Don Muang Air Port

The Taj Mahal and members of the Around-the-World postgraduate tour

India



Dr. Winchell McK. Craig delivering lecture

muddy waters into the sea. Then came miles and miles of green rice fields.

The group stopped at Calcutta only long enough to change planes, and then proceeded to beautiful New Delhi. This is an interesting city, with its magnificent government buildings, its splendid new Ashoka Hotel, perhaps the largest and finest in the Orient, its fascinating shops and its large and varied population.

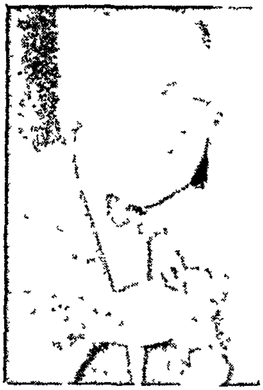
A scientific session was held in New Delhi on gastrointestinal hemorrhage, abdominal surgery, etc.

From New Delhi we took a six-hundred-mile drive into the interior, enjoying an alluring but rough journey to Agra, thence to Jaipur and then back to the capital. The high point of this excursion was, of course, the never-to-be-forgotten visit to the beautiful Taj Mahal, "a teardrop of love on the cheek of time." This "tomb of love" is a glistening white marble building rising like a jewel from green gardens and its fountain-fed reflecting pool.

One of the most exciting adventures of the entire trip was an elephant ride to the top of a small mountain on the way to Amber, and the most moving experience was the visit to the tomb of the Mahatma Gandhi, with its simplicity so characteristic of this great man.

The last stop in India was Bombay, where the group was met by members of the India Section of the College, including **Dr. A. V. Baliga**, F.R.C.S. (Eng.), F.I.C.S., president of the Section, **Dr. A. E. DeSa**, F.R.C.S. (Eng.), F.I.C.S., its treasurer, **Dr. R. N. Cooper**, F.R.C.S. (Eng.), F.I.C.S., long active in the affairs of the Section, and **Mrs. Cooper.**

The first visit was to the Tata Memorial Hospital, which is entirely devoted to the treatment of cancer. About eight thousand cases are treated each year. The tongue is the predominant site of the disease. The medical meeting was presided over by **Dr. J. C. Paymaster,** F.R.C.S. (Eng.), F.I.C.S., and was very interesting.



Dr. Curtice Rosser

Dr. Herbert Hayes

Next we visited the King Edward Hospital, a very fine institution built for and operated by Indian surgeons. There we were taken on ward rounds by **Dr. P. K. Sen,** F.R.C.S. (Eng.), F.I.C.S., a very fine *thoracic surgeon who had trained in Philadelphia.*

Finally we were conducted by Dr. Cooper to a private hospital to see an interesting case of multiple myeloma.

And in the afternoon, at Dr. Cooper's invitation, we were privileged to witness a beautiful baptismal ceremony of the Parsi religion, of which faith Dr. Cooper is an adherent.

The formal banquet was held that evening at the Wellindon Country Club, a very beautiful affair attended by the surgeons and their ladies. Dr. A. V. Baliga presided over the dinner, and the evening closed with the singing of the two national anthems.

Egypt

An overnight flight brought us to Cairo, where we were housed at the fine new Shepheards Hotel on the Nile.

Here we were joined by an old friend, Dr. E. A. Kharadly, professor of surgery at the Alexandria Medical School, and a Fellow of the College. He kindly arranged for an audience with the Minister of Health, who received the group very courteously and took steps to facilitate our visit to two leading hospitals.

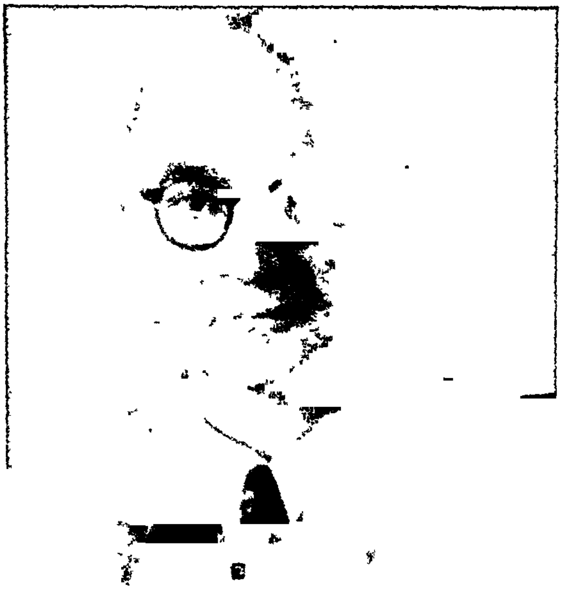
One of the hospitals, the one associated with the University Medical School, has three thousand beds.

We met the dean of this institution, the surgical chiefs and the head of the two-hundred-bed department of ophthalmology.

Our travelers of course rode camels at the pyramids and had pictures taken with them as well as with the Sphinx. One of our most fascinating experiences was a visit to the national museum to see the treasure removed from the tomb of King Tut.

The group had expected to fly direct to Istanbul, but instead was fortunate enough to get to Beirut, site of recent revolution and the place where some American marines lately were encamped, but all was quiet when we arrived. From there we flew to Turkey on a splendid German plane.

Turkey



Prof. Dr. Fahri Arel, M.D., F.I.C.S.

precious china and its chamber of royal jewels, made the story of Aladdin really come to life.

In the evening all of us were the guests of Prof. and Mrs. Arel at a delightful cocktail party and a delicious buffet dinner. About fifty people were present, thus giving us an opportunity to become well acquainted with the Fellows of the Turkish Section and their wives.

The following morning the formal scientific session was held before an enthusiastic audience of about two hundred Turkish surgeons and medical students. Later, we were taken to the University Club to meet the dean and other faculty members and to take lunch with them.

In the afternoon, we took a long drive up the picturesque Bosphorus, visiting the historic castle and fort which guarded the approach to the city in ancient times. The drive continued until the submarine nets which now protect the approach to the city from the Black Sea could be seen.

The next morning we parted from our friends with sincere regret and took the plane for Athens.

Greece

At the airport, to meet us in Athens, on the morning of Sunday, November 23, were **Prof. Nicholas C. Louros**, F.I.C.S. (Hon.), professor of gynecology at the University of Athens, president of the Greek Section of the College, and his associates. We soon were settled comfortably at the Athenee Palace Hotel, and in the afternoon made a tour of the city.

That evening there was an enjoyable get-acquainted cocktail party and reception at the Grand Hotel. A friendly spirit soon developed between the Greek Fellows of the College and their American guests. The ladies, too, established a fine base of mutual understanding, all of which augured well, and justifiably so in view of further developments.

The entire next day was devoted to scientific endeavor. In the morning, a scientific session was held in the amphitheatre of the Laikon Hospital, with all the officers of the Greek Section, wearing their official robes, on the rostrum. I was privileged to be similarly attired and to be seated with them. Among the officers present were: **Prof. Louros**; **Prof. J. Charamis**, vice-president; **Prof. N. Christeas**, general secretary, and **Prof. Ch. Toul**, treasurer of the Section.

In behalf of the Greek Section, Prof. Louros presented to the visiting Americans two oil paintings depicting ancient Greek surgery, and a parchment on which the oath of Hippocrates was written in the ancient fashion and a similar one

American surgeons meeting their Greek colleagues for a social hour

bearing an English translation. I accepted these in behalf of the College for the Greek Room of the Hall of Fame.

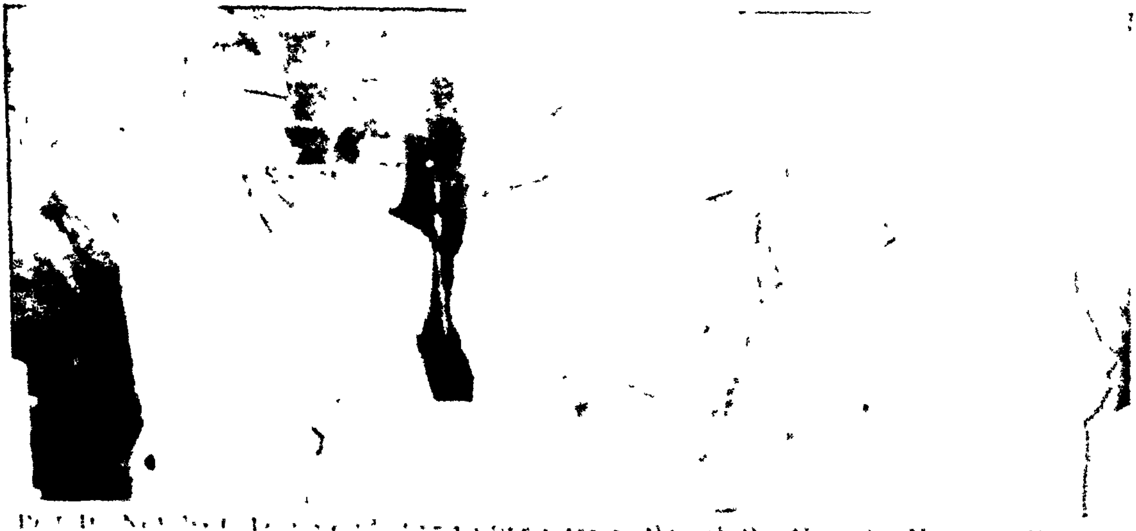
Prof. Louros, in his welcoming address, learnedly and philosophically discussed the importance of rapid dissemination of knowledge throughout the world. He recalled instance after instance in medical and surgical history of the tortuous duplication of effort in solving problems and the tragic delay in putting into general practice the principles gained by individual discoveries, all for the lack of direct communication.

"It is true," he said, "that now the pen and the printing press have facilitated communication.

"But," he added, "who can read and follow so many volumes today, at a time when motorcar-driving, dishwashing, baby-sitting and other necessities have been added to a doctor's duties?"

Dr. Louros stressed the need of direct interchange of knowledge, and concluded:

"But fate has foreseen. Together with antibiotics, modern anesthesia, blood transfusion and isotopes, it sent to surgeons a modern Mercury in the person of Max Thorek, who added to the overburdened shoulders of surgeons great wings—



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Prof. Louros addressing scientific session; seated, left to right, Prof. N. Christeas, F.I.C.S., Dean John Charamis, F.I.C.S., and Dr. Jackson

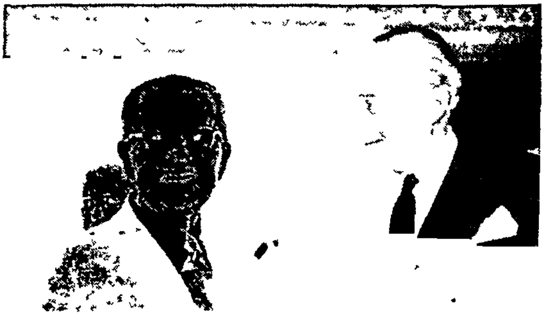
the wings that are called the International College of Surgeons."

Surgeons of both the Greek and the United States Sections took part in the program. The presentations of the Greek surgeons, interspersed with excellent films on surgical procedures, were very interesting.

In the afternoon, Prof. Louros escorted us through the splendid Alexandra Maternity Hospital, where, as his illustrious father had been, he is chief and head of the department of obstetrics and gynecology. A section devoted to the training of midwives was a gift of the late Queen Alexandra. Needless to say, the hospital is complete to the last detail and is operated accordingly, as might be expected of its highly efficient director.

That same day we visited a splendid fifteen-hundred-bed hospital, saw some interesting cases in the wards and viewed several excellent motion picture films. One film demonstrated the removal of a large hydatid cyst of the lung with preservation of the latter. The other was a rare case of the same disease of the ventricle of the heart. When this was opened, one could see a daughter cyst expelled with each contraction of the ventricle. It was of interest to know that **Prof. Jorge Alberto Taiana**, F.I.C.S. (Hon.), president of the Argentine Section of the International College of Surgeons, had lectured in Athens on this same subject. The condition is extremely rare—only about five cases appearing in the literature. It is a great tribute indeed to the skill of Dr. Statcthur, the young, handsome, and brilliant surgeon who had performed the operation, that the patient had recovered.

The following day, Tuesday, November 25, was given over to sightseeing, and in the evening there was a dinner party for approximately a hundred surgeons and their wives. Roses and carnations decorated the table, and the cloth was strewn with a delicate pink wild flower called *poppia*. The dinner was perfect. **The Hon. James Riddelberger,** the United States ambassador to Greece, and **Mrs. Riddelberger,** together with Mr. Stratos, the Greek Minister of Welfare, and Mrs. Stratos, were the guests of honor. Both Mr. Riddelberger and Mr. Stratos responded to toasts to their respective countries. **Prof. J. Charamis,** dean of the Medical Faculty of the University of Athens, and



Dr. Wayne W. Babcock with Prof. Louros

At the banquet: from left to right, Mrs. James Riddelberger, Prof. Louros, Dr. Babcock, Mrs. Stratos, Prof. Christeas, Prof. Garofallidis and Asst. Prof. Coutifari

vice-president of the Greek Section of the International College of Surgeons, spoke as the representative of the University. Prof. Louros delivered one of his inimitably witty and urbane addresses. He paid tribute to the generosity of the United States government, and therefore to the United States tax-payer. The hospital of which he was the head, he explained, had been built with funds provided by the United States under the E.C.A. plan.

The evening ended on a fine plane of friendliness, with everyone singing the respective national anthems of the two countries.

In Athens, of course, sightseeing took on new dimensions. To stand among what remains of the Parthenon was a lesson in personal humility and an awareness of the infinite possibilities of the human spirit.

Italy

Prof. Dr. José Soler-Roig, in front of the *Hospital de la Santa Cruz Y San Pablo,* showing one of the leather-bound volumes of the hospital records, written on parchment and illustrated in color, some of which date back to the fourteenth century

ward on *his* projected Around-the-World trip. In the hospital the visiting surgeons were privileged to watch Dr. Soler-Roig put on as fine a demonstration of gallbladder and duct surgery and cholangiography as can be seen anywhere.

The scientific meeting was held at the *Colegio de Médicos.*

On Tuesday morning additional operations were scheduled, after which the surgeons joined their wives in sightseeing in this remarkable city of Barcelona, which blends the most advanced tendencies with visible reminders of its long and varied past.

A patient, seen in one of the out-patient departments of the Hospital, with a tumor of a size rarely seen in the United States but not uncommon in Spain and other countries visited by our touring surgeons, which because of its long duration and deep involvement is now inoperable

The Homeward Journey

That Tuesday was the last day the group spent abroad. In the evening we boarded a westward-bound plane, and in the morning, having completed a fifty-five-day, thirty-five-thousand-mile trip around the world, we were in New York. We were at home, but our experiences would always live with us.

Comments by the Founder

MISSION WITH PLEASURE

Dr. Max Thorek

The unanimity and enthusiasm with which the participants in the Third Around-the-World Postgraduate Refresher Clinic Tour sponsored by the International College of Surgeons voice their satisfaction with their journey matched only by the chorus of pleasure th which the Sections which were privi- ed to welcome the Tour report on *their* perience. Each side claims to have ined immeasurably from the inter- ange of scientific information and to ve enjoyed the social contact to a degree yond all expectation.

The travelers report that everywhere ey went where there were Fellows of e International College of Surgeons they lt *at home*. Their hosts write me that ey *felt favored* by the visit of *friends*.

The barriers of language, differences in anner and custom, all melted in the armth of mutual good will. Everywhere ere was a meeting of minds and an en- rgement of sympathy and understand- g based on a common acceptance of he purpose of the International College f Surgeons.

and generous men are happy to contribute to our cause and, more honor to them, never count the cost.

But through our Around-the-World Tours we can serve our purpose by exercising the most pleasurable of instincts. The desire to travel, to visit far-off places, to meet strange experiences, to see for ourselves those things we had previously only heard of or imagined, is frequently a dream and a desire we nourish all through our lives. We are very fortunate indeed if, still in the prime of life, we can fulfill that wish.

Travel on one's own, however, presents difficulties. Travel with a heterogeneous conglomeration of tourists may be annoying. But travel with our Tours solves all these problems. Comfort and convenience are assured, and congenial companionship, as well as sustained interest, is provided.

Letters from participants in the tour have extolled its success and expressed appreciation of the splendid service rendered by the travel agency and particularly by Mr. James H. Rebstock, the personal representative of the agency, who directed the tour and traveled with it.

International College of Surgeons Announces

First Step Forward . . . to Holl

Dr. Ross T. McIntire, Executive Director of I.C.S., who will act as Coordinator of Medical Activities

IN BRIEF. It is the expressed opinion of all who have helped plan it, that this tour offers more variation, interest and attraction than any tour ever presented to I.C.S. members, their families and friends. Variation begins at the very outset with not just one travel method to Europe—but two of equal enjoyment are offered. To Amsterdam by way of fast Air Flight or by leisurely Ocean Voyage is your choice to make. After Amsterdam—in splendid succession follow COPENHAGEN, OSLO, STOCKHOLM, and HELSINKI in Scandinavia. Possessing memories that will last a lifetime, departure from these delightful lands of the Northern Lights is reluctantly made as the curtain closes upon the first scene of this travel tableau.

In the second scene, the curtain opens on our first visit to RUSSIA with a 3-day stay in LENINGRAD and in MOSCOW. Following a visit to colorful Bavaria — visiting VIENNA and MUNICH.

A short stay in gay PARIS provides a dash of spice to end the trip. Then—it's HOMEWARD BOUND for all—either by steamship or air.

Altogether, you will never forget what you see and do along these unusual travel trails.

ITINERARY IN OUTLINE

JULY 17 Leave NEW YORK via S.S. *NIEUW AMSTERDAM.*

JULY 24 Arrive ROTTERDAM, entrain for AMSTERDAM.

— OR —

JULY 23 Leave NEW YORK via airplane.

JULY 24 Arrive AMSTERDAM.

JULY 25-26 AMSTERDAM MEETINGS OF I.C.S.

JULY 27 Leave AMSTERDAM by late *afternoon plane for* COPENHAGEN.

JULY 28-29 COPENHAGEN city sightseeing and excursion into surrounding countryside; half-day each.

JULY 30 Leave COPENHAGEN by plane for OSLO.

JULY 31 OSLO *city sightseeing for half-day.*

AUG. 1-3 Three day trip to BERGEN and the famous Norwegian FJORD country, returning to OSLO.

AUG. 4 Leave OSLO by plane for STOCKHOLM.

AUG. 5-6 STOCKHOLM city sightseeing for half-day and full-day excursion by plane to VISBY.

AUG. 7 Leave STOCKHOLM by plane for HELSINKI.

idsummer European Postgraduate Tour—1959

andinavia, Finland, Russia, and Austria

AUG. 8-9 HELSINKI MEETINGS OF I.C.S.

AUG. 10 Leave HELSINKI by plane for LENINGRAD.

AUG. 11-13 LENINGRAD complete city sightseeing and day at leisure.

AUG. 14 Leave LENINGRAD by plane for MOSCOW.

AUG. 15-17 MOSCOW complete city sightseeing and full day at leisure.

AUG. 18 Leave MOSCOW by plane for VIENNA.

AUG. 19-20 VIENNA city sightseeing and Meeting with Fellows of International College of Surgeons.

AUG. 21 Leave VIENNA by plane for MUNICH.

AUG. 22-23 MUNICH city sightseeing one half-day and full-day excursion to OBERAMMERGAU.

AUG. 24 Leave MUNICH by plane for PARIS.

AUG. 25 PARIS full day city sightseeing.

AUG. 26 Boat-train to LEHAVRE and embark SS NIEUW AMSTERDAM for NEW YORK, arrival on SEPTEMBER 2.

—OR—

AUG. 26 Leave PARIS by evening plane to NEW YORK, arrival the following morning

FAST FACTS—INTERNATIONAL TRAV
EL SERVICE, INC., as Official Trave
Representative for the International Col
lege of Surgeons, smooths the way.

HOTELS: Best available.

MEALS: Table d'hote throughout tour, ex
cept in PARIS and LONDON.

SIGHTSEEING: By deluxe motorcoach wit
English speaking guides.

TRANSFERS: From airports to hotels an
return.

COST PER PERSON:

AIR:	
First Class	$2280.0
Economy/Tourist Class	1915.0
STEAMSHIP:	
First Class (Minimum)	$2230.0
Cabin Class (Minimum)	2010.0

DEPOSIT: $200.00 per person.

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tions for yourself and your party, pleas
write directly to INTERNATIONA
TRAVEL SERVICE, INC., 119 South Stat
Street, Chicago 3, Illinois, enclosing you
deposit.

. . . ITINERARY FOR . . . . . .

International College of Surgeons . . . Aro

Dr. Edward Compere, who will act as Coordinator of Medical Activities

NOTE: Lack of space necessarily limits this world circling tour to the barest of descriptions here. Please write to International Travel Service, Inc., 119 So. State Street, Chicago 3, Illinois . . . for fully detailed descriptive folder now being prepared for early publication.

OCT. 10 Leave SAN FRANCISCO by morning plane for HONOLULU. Arrive HONOLULU in afternoon, and HOTEL ROYAL HAWAIIAN.

HAWAII

OCT. 11-12 In HONOLULU at leisure.

OCT. 13-14 Leave HONOLULU by evening plane for JAPAN.

JAPAN

OCT. 15 Arrive TOKYO in early morning and to HOTEL IMPERIAL. At leisure.

OCT. 16 TOKYO city sightseeing for full day.

OCT. 17 Full-day excursion to NIKKO Shrines, returning to TOKYO.

OCT. 18-19 TOKYO MEETINGS OF I.C.S.

OCT. 20 Leave TOKYO via YOKOHAMA and KAMAKURA for MIYANOSHITA in HAKONE NATIONAL PARK. Overnight at HOTEL FUJIYA.

OCT. 21 Continue to NUMAZU and entrain to KYOTO and to HOTEL KYOTO.

OCT. 22 KYOTO sightseeing, including the special parades of the JIDAI MATURI celebrated annually on this day.

OCT. 23 Morning sightseeing tour to NARA, returning to KYOTO.

OCT. 24 Leave KYOTO by plane for TOKYO and HOTEL IMPERIAL.

OCT. 25 Full day at leisure in TOKYO. In late evening leave by plane for HONG KONG.

HONG KONG

OCT. 26 Arrive HONG KONG in early morning. HOTEL PENINSULA. Day at leisure.

OCT. 27 Half-day sightseeing drive on Island of Hong Kong, luncheon, and afternoon at Repulse Bay.

OCT. 28 Half-day sightseeing drive around Kowloon and the New Territories.

OCT. 29-30 HONG KONG I.C.S. MEETINGS.

OCT. 31 Leave HONG KONG by morning plane for BANGKOK and HOTEL ORIENTAL.

THAILAND

NOV. 1 BANGKOK city sightseeing for full day.

NOV. 2 BANGKOK I.C.S. MEETINGS.

NOV. 3 Leave BANGKOK by noon plane for NEW DELHI and the new HOTEL ASHOKA.

. . . WORLD MEETINGS . . .

World Tour—October 10 - November 28, 1959

INDIA

NOV. 4 DELHI city sightseeing for full day in Old and New Delhi.

NOV. 5 Leave DELHI by morning motorcoach to AGRA and the TAJ MAHAL. Overnight at HOTEL LAURIES.

NOV. 6 Return to DELHI from AGRA by motor via the deserted city of FATEPHUR SIKRI.

NOV. 7 Leave DELHI by mid-morning plane for MADRAS, arriving late afternoon. Short sightseeing tour and overnight.

NOV. 8 Leave MADRAS by mid-morning plane for COLOMBO on the island of Ceylon.

CEYLON

NOV. 9 Morning sightseeing around COLOMBO followed by a drive to NUWARA ELIYA.

NOV. 10 Morning motoring down the mountains to KANDY. Sightseeing and overnight stay at the QUEENS HOTEL.

NOV. 11 Return to COLOMBO and take evening plane for CAIRO.

EGYPT

NOV. 12 Arrive CAIRO in early morning and to the new NILE HILTON HOTEL. Afternoon city sightseeing.

NOV. 13 Morning city sightseeing followed by afternoon Camel-Ride to the Pyramids and Sphinx.

NOV. 14 Leave CAIRO by morning plane for BEIRUT and HOTEL BEIRUT COMMODORE. Afternoon sightseeing.

LEBANON

NOV. 15 Full day excursion to ruins at BAALBEK and DAMASCUS.

JORDAN

NOV. 16 Afternoon flight from BEIRUT to JERUSALEM and to best hotel available

. . . . . .

NOV. 17-18 HOLY LANDS sightseeing of all Biblical sites and a visit to BETHLEHEM.

ISRAEL

NOV. 19 Pass through Mandelbaum Gate into NEW JERUSALEM, and continue by auto to TEL AVIV and HOTEL DAN.

NOV. 20 TEL AVIV I.C.S. MEETINGS.

NOV. 21 Excursion to HAIFA and return.

TURKEY

NOV. 22 Leave TEL AVIV by plane for ISTANBUL and HOTEL ISTANBUL HILTON.

NOV. 23 ISTANBUL city sightseeing for full day.

NOV. 24 ISTANBUL I.C.S. MEETINGS.

GREECE

NOV. 25 Leave ISTANBUL by morning plane for ATHENS and HOTEL GRAND BRETAGNE.

NOV. 26 ATHENS city sightseeing for full day, including Acropolis.

NOV. 27 ATHENS I.C.S. MEETINGS.

NOV. 28 Leave ATHENS by direct plane for the UNITED STATES—or commence independent itinerary en route home.

RESERVATIONS AND INFORMATION: International Travel Service, Inc., 119 South State Street, Chicago 3, Illinois, official travel representative for International College of Surgeons.

COST PER PERSON:

. . . ITINERARY FOR . . . .

International College of Surgeons . . . Aroun

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From the Executive Director's Notebook

SOUTHEASTERN REGIONAL MEETING SETS PACE FOR 1959

Dr. Ross T. McIntire

College activities in 1959 got under way with a most auspicious start. The Southeastern Regional Meeting, which was held at the Americana Hotel in Miami Beach, Florida, will long be remembered as outstanding for both the scientific program and the excellent entertainment provided for the members and their families.

Dr. Harold O. Hallstrand served as general chairman. During preceding months, he had given greatly of his time and energy to make this meeting a real success. He was fortunate to have **Dr. Frank L. Meleney**, one of the outstanding surgeons of our country, assist him in many ways. Dr. Meleney was honorary chairman of the meeting, but he was also very active in helping to organize the program.

It is impossible to list all of the men who did so much to make this meeting a success, but certainly the regent for the state of Florida, **Dr. Don C. Robertson**, should be given credit for the solid backing that he gave Dr. Hallstrand throughout the period of preparation for the meeting.

Miami Beach—an afternoon at Tropical Park, where a special race was named for the International College of Surgeons—as well as conducted tours, fashion shows, etc. I am sure that a repeat performance by the Southeastern states would draw twice the number of people.

The scientific session was excellent throughout. A feature of this session was the great number of panels, dealing with: diseases of the heart, gallbladder and thyroid; the latest developments in antibiotics as related to surgery, and the management of surgical emergencies, which was scheduled to provide information for the members of the Academy of General Practice.

Another feature was the address given by the Surgeon General of the Navy, **Rear Admiral Bartholomew W. Hogan**. The subject of his address was *Medical Problems of Nuclear Warfare and Civil Disaster*. This provided much information in the way of practical plans for survival of citizens in case of a nuclear attack. One of the difficulties that face all citizens is the lack of understanding of what can be done through a real civil defense organization. This had not been well presented in the past, but this paper provided the sort of information that any organization or individual would need to protect himself, his family or his group

International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)

A World Federation of General Surgeons & Surgical Specialists, Inc.
"Instrument of the Free World"

OFFICE OF THE
INTERNATIONAL SECRETARY GENERAL
850 WEST IRVING PARK ROAD
CHICAGO 13, ILLINOIS

Dear Doctor:

We are preparing a Directory of the membership of the International College of Surgeons in the United States and the rest of the world. This will include also the Constitution and Bylaws of the College, information on qualifications for membership, a description of the activities of the College, as well as a full list of members, alphabetically and regionally arranged, with pertinent information about each member.

The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

We would appreciate your cooperation. Please return the attached subscription blank in the enclosed self-addressed envelope, and oblige

Yours sincerely,

PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
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United States Section

THE PRESIDENT'S MESSAGE

Regional Meetings and International Tours

Dr. Edward L. Compere

Last month I expressed the opinion that regional meetings were of utmost importance among the activities of the United States Section of the International College of Surgeons, without which the College could not reach the goal to which we are individually and collectively dedicated.

I am writing my February message on a train which bounces, jumps, dips, sways and bumps, while en route from Miami back to Chicago following the finest regional meeting that I have ever attended. If you were not there, you missed a delightful gathering.

Harold Hallstrand, M.D., F.A.C.S., F.I.C.S., D.A.B., the young and dynamic vice-regent for Florida and general chairman of the Southeastern Regional Assembly of the United States Section, was ably assisted by scores of committee chairmen and committee members. The result was one of the most comprehensive surgical programs ever presented to any congress or assembly.

The Assembly was an ambitious undertaking from the outset. Dr. Hallstrand and his associates visualized the meeting in large terms and on a large scale. They devoted themselves to their task with determination and with no respite until it materialized—a regional assembly that established a new standard for regional meetings and was profoundly rewarding to all those who participated in it. Dr. Hallstrand and his associates should feel gratified with the results they achieved.

Dr. Arnold Jackson, coordinator of the 1958 Around-the World Tour, showed Kodachrome pictures which he had made while on the trip. The hall was packed with an enthusiastic audience which showed keen enjoyment of the travelogue.

We have been discussing the plans for the 1959 World Tour with Mrs. Helen Jones and Mr. James H. Rebstock, of the International Travel Service, our official travel representatives; with Dr. Max Thorek, who originated these important international tours, and with Dr. Arnold Jackson, who made some very valuable suggestions. Mrs. Compere and I have agreed to serve as coordinators of this Arabian Night's dream trip. We plan to include visits to Beirut, Damascus and Israel. These additions are being made at the request of Fellows of the College who contemplate making the journey this year, and we are happy to comply with their wishes. We sincerely believe that we shall all be happy with these inclusions in our itinerary.

Next month I plan to discuss the 1959 Tour in detail.

ate problems of medicine in our country.

A word should be said regarding the television program, sponsored by the **Smith, Kline and French Laboratories** of *Philadelphia, Pennsylvania.* Operations performed at the St. Francis Hospital, Miami Beach, were presented in the Medallion Room of the Americana Hotel on Monday, Tuesday, and Wednesday. The operations presented were in the various surgical specialties. The production and direction of all of the television programs was excellent. The technical details in the operating rooms were splendidly worked out. It is to be hoped that at the September meeting in Chicago, this program can be duplicated.

The nurses' program was presented on Monday, January 5, and was sponsored by the Florida Nurses Association, with Miss **Eleanor Bindrim,** from St. Francis Hospital, as local chairman. The speakers were among the outstanding surgeons of this country: **Dr. Gerald H. Pratt,** clinical professor of surgery, Cornell University; **Dr. Claude S. Beck,** professor of cardiovascular surgery, Western Reserve University; **Dr. Charles P. Bailey,** professor of thoracic surgery, Hahnemann Medical College; **Dr. J. Gerard Converse,** professor and chairman of the department of anesthesia, University of Miami School of Medicine, and **Dr. Carl W. Walter,** associate clinical professor of surgery, Harvard Medical School. This was followed by a roundtable discussion which was moderated by **Dr. Edward R. Annis,** chairman of the department of surgery, Mercy Hospital, and the subject was on surgical nursing interests. The supervising nurses of all of the hospitals in Miami and Miami Beach, in addition to Dr. Walter's operating room assistant, Mrs. **Dorothy Errera,** participated in the discussion.

Ross T. McIntire

Rear Admiral Bartholomew W. Hogan, Surgeon General of the United States Navy, with Dr. Harold O. Hallstrand, general chairman of the Southeastern Regional Meeting

Surgical Nurses' Session, where eminent surgeons and leaders of the Florida Nurses Association joined to present an outstanding program

United States Section

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Dr. Edward L. Compere
President, United States Section
International College of Surgeons

Southeastern Regional Assembly

United States Section

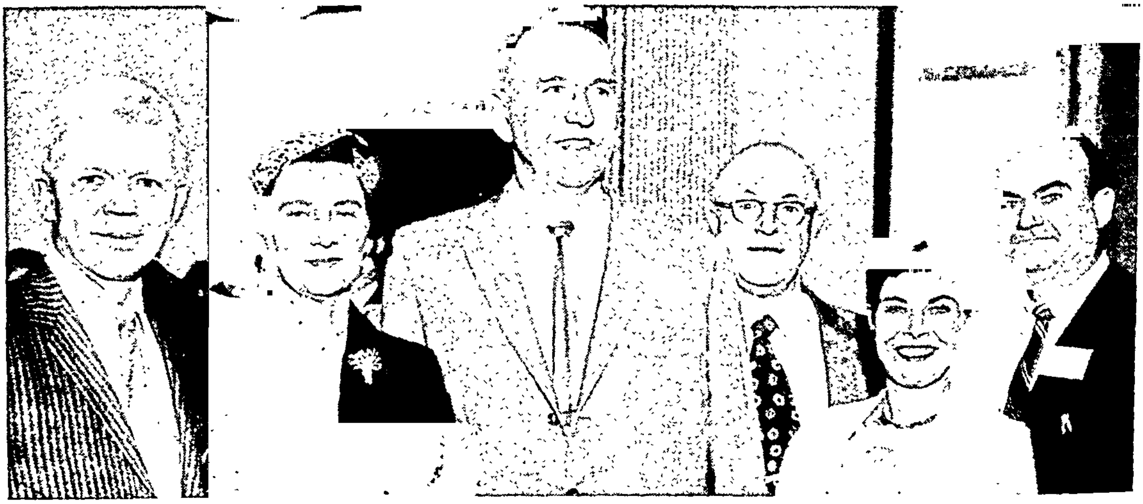
International College of Surgeons

January 4-7, 1959 Miami Beach, Florida

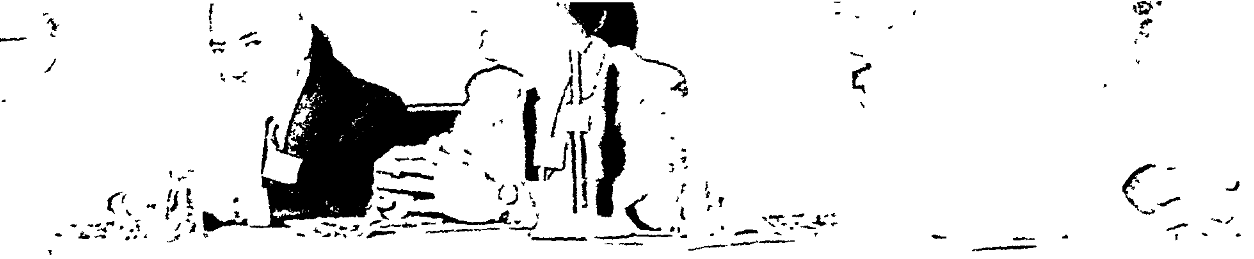
Some of the surgeons who made it an important scientific occasion, and Some of the ladies who made it a gay and happy one

Dr. George F. Lull
Assistant to the President
American Medical Association

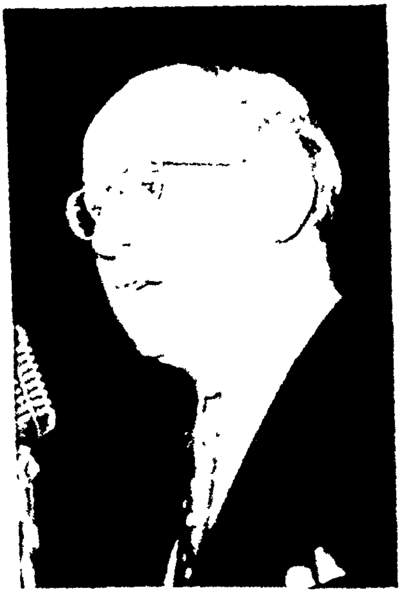
Dr. Joseph Stewart, chairman of the section on general surgery, and Dr. Frank L. Meleney, honorary chairman of the Southeastern Regional Meeting



At the social hour at the Americana Hotel, January 5, 1959, from left to right: Dr. Joseph F. Dorsey, Boston, Massachusetts; Mrs. John Norton and Dr. John Norton, USAAF Base Medical Commander, Homestead, Florida; Dr. Alexander Brunschwig, professor of clinical surgery at Cornell University Medical School, New York City; Mrs. Joseph Dorsey, and Dr. William W. Daniel, instructor in surgery, Cornell University Medical School, New York City



Panel on Biliary Tract and Pancreatic Disease as Regards Surgery, moderated by Dr. N. Frederick Hicken, Salt Lake City, and participated in by: left to right, Dr. Philip Thorek, Chicago; Dr. Manuel Lichtenstein, Chicago; Dr. Robert J. Freeark, Chicago; Dr. Ralph Coffey, Kansas City, Missouri, and Dr. Banning G. Lary, Miami



Dr. Carl Walter
Harvard University Medical School

Dr. and Mrs. Arnold Jackson, Madison, Wisconsin, with Dr. and Mrs. M. Leopold Brodny, Boston

Dr. Jean Paul Pratt, Detroit; Dr. Don Robertson, Orlando, Florida, and Dr. Curtice Rosser, Dallas

[illegible]

[illegible]

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

Reports from Chairmen of Important Committees

Mrs. Earl Ingram Carr

This month it is my pleasure to have two important members of your Board speak to you. I promised you that you would meet throughout the year various Board members. Every section of our vast country is represented on our Board by outstanding women who represent *you*. In last month's issue of the *Bulletin* the list of Board members was given. Won't you consult the list and communicate with your regional chairman offering any suggestions you may have and with a renewal of your membership for this year, if you have not already done so? I hope so.

This month, **Mrs. Virgil T. DeVault**, First Vice-President and efficient Chairman of the Committee on Foreign Exchange Scholarships, writes on this notable project of international significance.

But, first, Mrs. Thuss, a new and highly valued and talented member of the Board, will give the woman's version of the Southeastern Regional Assembly.

Mrs. William Thuss, Southeastern Regional Chairman was Chairman of the Woman's Auxiliary Program at the recent meeting in Miami. All reports of the women's activities have been superlative, and I wish to add my praise of **Mrs. M. A. Schofman**, Entertainment Chairman, to that of Mrs. Thuss.

Ruth Smith Carr

Report from Mrs. William G. Thuss

SOUTHEASTERN REGIONAL CHAIRMAN

At the delightful meeting in Miami, around a hundred and fifty women enjoyed the entertainment planned by Mrs. M. A. Schofman and her hospitable committee. *Freedom of Choice* seemed to be the theme. The variety of activities offered and all planned events went on with the efficiency of organization that never *showed through.* To be able to do a superlative job such as that at that season of the year calls forth the greatest admiration and appreciation.

On Sunday, we registered and greeted old friends.

Monday morning brought many to the Eastwood mezzanine for coffee and the tiny Americana pastries. That afternoon, many went to the horse races at Tropical Park. The fifth race was named honoring the International College of Surgeons and **Mrs. Edward L. Compere**, assisted by **Mrs. Arnold Jackson** and I presented a trophy to the winning owner and trainer. The gay and beautiful cocktail party, honoring Mr. and Mrs. Speidel, and a good dinner with friends, rounded out the first day.

A special bus took us to Burdine-on-the-Beach for tea and Florida fashions. This was my first opportunity to thank our hostesses and to tell the group about the Auxiliary's Scholarship program and the coming drive for membership. It was gratifying to find that the two words "join and promote" did not frighten them out of their seat. Mrs. [illegible] asked me later [illegible]

[illegible]

[illegible] Dr. [illegible]

Mrs. William G. Thuss

Mrs. Manuel A. Schofman

Orr, president-elect of the American Medical Association. Our table concurred that this had been an assembly to remember!

For me, *the greatest thrill was:* Three new members!

the most fun: The experience of meeting so many charming people!

the sincerest regret: That all wives of the International College of Surgeons members could not be there!

Le[illegible] B. Thuss

Mrs. Edward L. Compere and Mrs. [illegible]

[illegible]

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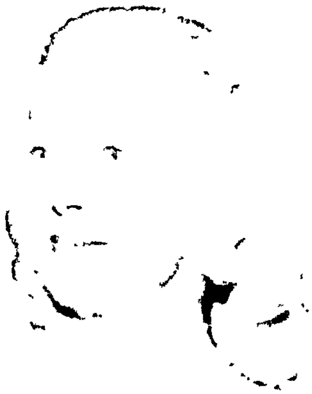
Mrs. William G. Thuss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Louise B. Thuss

Mrs. Edward L. Compere and Mrs. Harold O. Hallstrand

Report from Mrs. Virgil T. DeVault

Chairman of the Committee on

Foreign Exchange Scholarships

Mrs. Virgil T. DeVault
Chairman Committee on
Foreign Exchange Scholarships

On December 6, as I sat in our beautiful office building next door to our Hall of Fame, 1516 Lake Shore Drive, Chicago, Illinois, that impressive monument to the vision of our Founder, Dr. Max Thorek (and Mrs. Thorek), I was thrilled beyond words. I do wish you could have been there too!

Introducing Dr. Thaddeus Malejka, Young Surgeon from Poland

That morning **Dr. Edward L. Compere** brought to our board meeting a young Polish surgeon, **Dr. Thaddeus Malejka,** who is working in orthopedic surgery at Northwestern University and Chicago Wesley Memorial Hospital. He is a recipient of a grant-in-aid from the scholarship funds provided by the Woman's Auxiliary to the International College of Surgeons.

As this young Polish doctor spoke in his good English (which he had learned in about five months) he expressed his appreciation of the opportunity that had been given him by our Auxiliary.

That you may share our experience—at least in part—we give you a photograph of Dr. Malejka and a few of his own words.

The Meaning of Postgraduate Study in the United States

"As a recipient of a fellowship from the International College of Surgeons, I extend my heartfelt thanks to the scholarship committee and to the Woman's Auxiliary for making it possible for me to study and to work with Prof. Edward L. Compere and other orthopedic surgeons who are well known both in the United States and in Europe.

"In the orthopedic department of the Chicago Wesley Memorial Hospital I have the opportunity to learn the newest methods of operative treatment of diseases and injuries of the bones and joints.

"In Poland I worked in the coal mine region where severe accidents occur and where there is a need for highly qualified orthopedic surgeons. On my return to Poland I will be able to transmit to my doctor colleagues the knowledge and experience I am acquiring here in the United States.

"I am very happy to be in the United States, this wonderful country where I am enjoying such cordial hospitality.

"Life in Poland is not easy. Poland was devastated by the war, and as a result all of us still suffer in many ways.

Ties of Friendship Forged and Strengthened

"We were especially grateful to Americans for understanding Poland's difficult situation and for the help they have given us. As a student during the first postwar years I remember very well the help America sent to the Polish students in the form of UNRRA parcels. These students now form the Polish intelligentsia. They will never forget this help and they consider the Americans as their true friends.

"We hope that our friendship will grow closer and closer."

At our Annual Meeting in September, your board will present to you Dr. Thaddeus Malejka and some of the other young doctors receiving grants-in-aid from our Auxiliary.

Geography of Our Awards

To date we have supported six fellowships, namely those awarded to:

Dr. Ernst Beck from Germany, **Dr. Emile Bertho** from France, **Dr. Joseph Malejka** from Poland, **Dr. T. A. McLennan** from Canada, **Dr. William Walker** from Scotland, and **Dr. Thaddeus Malejka.**

The sum total cost has been eighteen thousand dollars or three thousand dollars per fellowship.

Research Grants to Doctors and to Medical Schools

In addition to this, a research grant of one thousand dollars was made November 30, 1956, to **Dr. Jack Davis,** doctor of philosophy in chemistry and medical student at Northwestern University. April [illegible], 195[illegible], a research grant of one thousand dollars was awarded to Northwestern University Medical School to permit Dr. [illegible]

Dr. Alfred Kreucker, [illegible]

Dr. Thaddeus Malejka

search work at the Chicago Medical School.

Opportunity to Present Papers Greatly Appreciated

Our Woman's Auxiliary has furnished the College enough money to bring several young residents to annual and sectional meetings where they have read acceptable papers on surgical subjects. July 7, 1958, **Dr. Buford T. Casebolt** of Kansas City, Missouri, delivered a paper at a medical meeting in Saranac, New York. His expenses were paid by a grant from our scholarship fund. August 13, 1957, **Dr. Joseph Malejka** presented a paper; and September 21, 1956, **Dr. Robert Matthews** gave a paper at the annual meeting of the International College of Surgeons. The expenses for these young surgeons were $2[illegible], $75, and $125 [illegible] paid out of the Woman's Auxiliary Fund.

Constructive Contribution to Surgical Education

[illegible]

"You can see from its accomplishments that the Woman's Auxiliary to the International College of Surgeons has really been busy and has really done a good job in assisting our educational program. I, for one, will be always willing to cooperate with the organization in any way possible."

The constitution of the Woman's Auxiliary states that we "aid in the promotion of surgical education, postgraduate training, scientific research, and philanthropic endeavor, and aid in international good will." With the encouragement and advice of the parent body's executive board we have directed all our dues (which are ten dollars per member per year) into a fund that supports this international postgraduate program.

"Future Unlimited"
As Mrs. Carr Would Say

Wouldn't it be wonderful if we could have at least ten fellowships a year? Of course, that would mean that we would have to increase our membership to three thousand. I wonder if we could! We are halfway there now! Would you be willing to help? You could, by being a member of our Auxiliary and paying the membership dues each year. A very warm and satisfying feeling is part of the reward for having a share in such a fine project!

A Safe Investment
With Growth Potential

In closing, I should like to point out to you that the *only* way we can keep this program going and growing is to have your paid membership each year and as many new ones as we can enlist. (And don't forget that this ten dollars is deductible for income tax purposes.) Compared with other investments, our program pays about the biggest dividends I know of. With today's cold war on—with such need for American prestige and international good will, we have an enormous challenge to meet.

Arilla DeVault

……

I am interested in furthering the program of the Auxiliary to the International College of Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

NAME:

ADDRESS:

Make check payable to The Woman's Auxiliary, United States Section, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Mrs. Louis Plzak, Treasurer

Section News

ARGENTINA

Dr. Canónico Takes Part in International Cancer Meetings

Dr. Abel N. Canónico, regent of oncological surgery of the Argentine Section of the International College of Surgeons, has recently participated in two international cancer meetings held in London.

At one, corresponding to the International Union Against Cancer, as chairman of the Committee on Professional Education, Dr. Canónico submitted a report on *Cancerological Education at the Pregraduate and Postgraduate Levels.*

The other meeting was the VII International Cancer Congress, where Dr. Canónico presided over two clinical panels and read a paper on *Prevention of the Lymphedema of the Arm in Radical Breast Surgery.* He also showed his educational film in technicolor on breast cancer.

In the general assembly of the International Union Against Cancer Dr. Canónico was elected vice president of the organization for Latin America.

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INTERNATIONAL COLLEGE OF SURGEONS

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GERMANY

German-Speaking Sections to Participate in Hamburg Congress

German-speaking sections of the European Federation of the International College of Surgeons will join with the German Section in the congress to be held June 1-3, 1959, in Hamburg, Germany. These are the Netherlands, Austrian and Swiss Sections.

Chairman of the congress is **Prof. Dr. A. W. Fischer**, F.I.C.S. (Hon.), professor of surgery at the University of Kiel and president of the German Section of the College.

A general assembly will be held, and the first day of the meeting will be devoted to consideration of (1) anesthesia subjects and (2) postoperative metabolic disturbances.

On the second and third days there will be simultaneous sessions devoted to the surgical specialties. Operative procedures will be demonstrated; patients will be introduced, and their cases fully discussed. Visiting surgeons will select the clinics which interest them most.

The general surgical group will meet once with **Prof. Dr. Zuckschwerdt**, of Hamburg, and again with **Prof. Fischer** and **Prof. Robert Wanke**, both of Kiel.

Sessions on the specialties will be held under the direction of the following:

TRAUMA AND ORTHOPEDICS: **Prof. Gerhard B. G. Küntscher** (Hamburg) and **Prof. Rohlederer** (Kiel)

PLASTIC SURGERY: **Prof. Schuchardt** (Hamburg)

UROLOGY: **Dr. Peter Bischoff** and **Prof. Hans T. Junker** (both of Hamburg).

GYNECOLOGY: **Prof. Gerhard Schubert** and **Prof. Willi Schultz** (both of Hamburg)

ANGIOGRAPHY: **Dr. Kurt Egan Loose** (Itzehoe-Holstein)

The programs of these specialty sessions will not, as hitherto, consist of the reading of scientific papers, but emphasis will be placed on the practical aspects of the subjects under consideration.

Prof. Dr. K. Boshamer
WUPPERTAL-BARMEN
Secretary, German Section
International College of Surgeons

INDIA

Officers Elected for the year 1959-1960

The Indian Section of the International College of Surgeons held its annual meeting at Vizag, December 31, 1958. The following officers were elected for the year 1959-1960:

PRESIDENT:
- **Dr. C. P. Viswanatha Menon**, Madras

PRESIDENT-ELECT:
- **Dr. B. N. Balakrishna Rao**, Gwailior

VICE-PRESIDENTS:
- **Dr. K. G. Munsif**, Bombay
- **Dr. R. H. Betts**, Vellore
- **Dr. M. Krishnamurthi**, Vizag
- **Dr. V. G. Vaishampayan**, Sholapur
- **Dr. B. N. Sinha**, Lucknow

HON. SECRETARY:
- **Dr. A. E. deSá**, Bombay

HON. TREASURER:
- **Dr. P. K. Sen**, Bombay

CREDENTIALS COMMITTEE:
- **Col. K. G. Pandalai**, Madras
- **Dr. K. G. Munsif**, Bombay
- **Dr. A. E. DeSá**, Bombay

FINANCIAL COMMITTEE:
- **Dr. P. K. Sen**, Bombay
- **Dr. G. K. Munsif**, Bombay
- **Dr. G. D. Adhia**, Bombay

In Memoriam

JACOB BITSCHAI
M.D., F.I.C.S.
1894-1958

Prof. Dr. Jakob Bitschai, F.I.C.S.

Am 11. Dez. 1958 ist in Lausanne Schweiz **Professor Dr. Jacob Bitschai** aus Alexandrien Ägypten nach einjahrigem Leiden verstorben. Der Mann, dem Tausende von urologisch Kranken Leben und Gesundheit verdanken, ging an einem Hypernephrom zugrunde, dessen erste klinische Manifestation eine Skelettmetastase war. Die Entfernung von Niere und Metastase sollte ihm nur vorubergehend

Fouad I. Hospital, Alexandrien, anvertraut. 1944 erhielt er seine Ernennung als Visiting Professor der Universität Alexandrien. 1951 ernannte ihn die Universität Cairo erst zum Visiting Professor für Urologie und dann zum Professor für Clinical Urology. Gleichzeitig erhielt er noch eine Ernennung am Victoria Hospital Cairo, ohne dass er indessen seine Tätigkeit in Alexandrien aufgab.

Bitschai gehörte noch einer Generation an, welche die Entwicklung der Urologie zum Spezialfach miterlebt hat. Sein besonderes Interesse gehörte den endovesicalen Eingriffen. Im Jahre 1932 entwickelte er das von Zeiss-Wolf, Berlin, hergestellte Instrument für transurethrale Resektion, und bis zum letzten Tage seines Schaffens hat ihn Anwendung und Ausbau dieser Methode beschäftigt.

Viel beschaftigt hat ihn auch die Geschichte der Urologie, und gerade durch seine Forschungen in Ägypten war er in der Lage, wertvolle Beitrage zu der Historie der Medizin des Altertums zu leisten.

Seine gewaltige praktisch-medizinische [illegible]

machte es ihm leicht, Freunde zu finden und deren Anhänglichkeit sich zu bewahren. Kein Bittsteller verliess unbeschenkt die Pforten seines Hauses, und für seine Freunde war er unermüdlich tätig, wenn sie seiner Hilfe bedurften. Für sie wird die Lücke, die sein Tod gerissen hat, nie mehr ausgefüllt werden.

Rudolf Nissen
BASEL-SWITZERLAND

After an illness of one year's duration, Doctor Jacob Bitschai of Alexandria, Egypt, died in Lausanne, Switzerland, on December 11, 1958. The man, to whom thousands of patients with urologic diseases are thankful for their life and their health, succumbed to a hypernephroma, the first clinical manifestation of which was a bone metastasis. The resection of a kidney and of the metastasis brought him only temporary relief and hope.

Born November 3, 1894, in Odessa, Bitschai, who until the origin of the Nazi regime was one of the most capable and most respected urologists of Berlin, found a new opportunity for extensive and productive professional work in Alexandria, Egypt, in 1934. It started with his appointment as chief of the department of urology of the Jewish Hospital in 1935. The same department of the newly constructed Fouad I Hospital in Alexandria was entrusted to him in 1937. In 1944, he received an appointment as visiting professor of the University of Alexandria. The University of Cairo appointed him first as visiting professor in urology and later, in 1951, as professor of clinical urology. At the same time, he accepted another appointment at the Victoria Hospital in Cairo without, however, giving up his activities in Alexandria.

Bitschai belonged to a generation which witnessed the development of urology as a specialty. His particular interest was devoted to endo-vesical operations. In 1932 he developed the instrument for trans-urethral resection which was manufactured by Zeiss-Wolff, Berlin. Until the last day of his active life, the administration and development of this method occupied him.

He showed much interest in the history of urology, and, particularly, his research in Egypt enabled him to make valuable contributions to the history of medicine in antiquity.

His enormous practical medical experience, his careful and conscientious indications and his brilliant operative skill made him an internationally known representative of his specialty—a fact which is attested to by the numerous honorary memberships conferred upon him.

The picture of Jacob Bitschai would be incomplete if his humane qualities as a physician and his noble attitude were not mentioned. His modesty and his sense of humor made it easy for him to find friends and to keep them. No petitioner ever left the doorsteps of his house unrewarded. Bitschai never tired of working for his friends when they needed his assistance. For them the loss resulting from his death can never be replaced.

Rudolf Nissen
BASEL-SWITZERLAND

Prof. Dr. Rudolph Nissen, F.I.C.S. (Hon.), former president of the International College of Surgeons and director of the department of surgery at the University of Basel, Switzerland, devotedly directed all the resources of science to aid Dr. Bitschai and alleviate his suffering. He now writes this moving tribute to his friend.

In Memoriam

THOMAS B. NOBLE

M.D., F.I.C.S.

1895-1958

Dr. Thomas B. Noble, F.I.C.S.

In the January 1959 issue of the *Journal of the International College of Surgeons*, there is a challenging article, magnificently illustrated in color, by Dr. Thomas B. Noble, of Indianapolis, Indiana. Another article by Dr. Noble will appear in the March issue.

Every reader of these papers, whether

Educated in the public schools of his city, Dr. Noble received his B.A. degree from Wabash College and his M.D. from the University of Wisconsin. He also studied at the University of Pennsylvania, the Hospice General at Rouen, France, and at Washington University at St. Louis, Missouri.

In 1914, he volunteered for medical duty with the British army and served in Belgium. He worked under Davidson, McAllister, Cushing, Crile. His concern over the fatalities resulting from peritonitis led to his originating the *Noble Plication*, first tried with success in 1920. *Peritonitis and its Aftermath of Adhesions* was published in 1937. In all, Dr. Noble made forty-five original contributions to surgery.

His correspondence with surgeons and scientists throughout the world was voluminous. In 1957 he began to publish his monthly *Prologomena Medica*, which greatly delighted the more than five-hundred recipients with whom he enjoyed an

In Memoriam

HAYRI NISANTAS

M.D., F.I.C.S.

1889-1958

Prof. Hayri Nisantas, F.I.C.S., of Istanbul, Turkey, died on July 27, 1958.

Dr. Nisantas was born in Istanbul in the year 1889.

In 1911 he was graduated from the Faculty of Medicine of the University of Istanbul as a military doctor, with the rank of captain. Upon completing his military training, he was attached to the Gülhane Hospital. During World War I he served as a surgeon on several war fronts. He became distinguished for the success he achieved with his surgical treatment of fractures and nerve injuries.

In 1920, *after a competitive qualifying* examination, Dr. Nisantas became an associate professor of surgery on the Faculty of Medicine at the University of Istanbul, a position he occupied for three years.

He then went to Germany to advance his surgical knowledge. Upon his return to Turkey he accepted a post in the Izmir Military Hospital.

Eventually he severed his connection with the military service and became associated with a number of civilian hospitals, where he further developed his surgical technic. In recognition of his ability he was appointed Surgical Inspector in the Ministry of Health.

Dr. Nisantas' last association was with the Hospital for Bone and Joint Diseases, where he was chief of surgery.

Among Dr. Nisantas' many publications, his book, *Fractures and Dislocations,* is perhaps the best known.

He was a distinguished and industrious surgeon, tolerant and broadminded, and exceedingly generous, offering his services to the poor and needy with no thought of remuneration.

His career is an inspiration to all who serve as practitioners of surgery.

Fahri Arel, M.D.
President, Turkish Section
International College of Surgeons
Istanbul, Turkey

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Vol. 31 MARCH, 1959 No. 3

General Surgery

Ischemic Anastomotic Breakdown and Gangrene of the Gastric Remnant Following Subtotal Gastrectomy*

BUFORD T. CASEBOLT, M.D.
KANSAS CITY, MISSOURI

Two cases of ischemia of the gastric remnant following subtotal gastrectomy are presented. A review of the pertinent current literature is included, as is a resume of the collateral arterial pathways to the proximal portion of the stomach. An avascular remnant is obviated by appropriate preservation of an adequate blood supply. Early d [illegible]

THE surgical literature is voluminous with accounts of the complications following gastric resection. A survey of the American surgical literature, however, reveals only meager reference to devascularization of the gastric remnant.

Rutter, in 1953, reported a case of necrosis of the gastric remnant in a patient aged 50, in which high [illegible] about the upper part of the body and the [illegible]

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* [illegible]

Billroth I reconstruction. The author warned surgeons against too high a resection, especially in an aged patient with generalized arteriosclerosis, and advised that in such cases the upper vasa brevia be jealously safeguarded.

Spencer, in 1956, reported a similar case, in which the condition followed an 80 per cent radical subtotal gastrectomy and splenectomy, with ligature of the left gastric artery at its origin for carcinoma. At reexploration on the third postoperative day, it was observed that there was a small perforated gangrenous area and that the whole gastric remnant appeared avascular. A total gastrectomy was performed, which was eventually successful.

Stuart and Jordon, in 1957, reported 2 cases of ischemic sequelae due to excessive mobilization of the stomach. In 1 case there was frank gangrene at reexploration on the ninth postoperative day. In the other there was an anastomotic perforation secondary to deficiency of the blood supply to the residual gastric pouch.

REPORT OF CASES

CASE 1.—F. A., an obese white man aged 76, was admitted to the hospital with hemorrhage from the upper part of the gastrointestinal tract. After subsidence of bleeding, barium studies revealed hiatus hernia, chronic duodenal ulcer, and duodenal and sigmoid diverticuli, all as possible sources of hemorrhage. Billroth I hemigastrectomy, with vagotomy and transabdominal repair of hiatus hernia, was performed. On the eighth postoperative day, a gastroduodenalcutaneous fistula developed through a partially dehisced wound. On the nineteenth postoperative day a double (decompression and feeding) proximal jejunostomy was performed because of unabating fistula and deterioration of the nutritional status. At reexploration an avascular remnant, with disruption at the suture line, was seen. Subsequently the patient did poorly in spite of administration of corrective intravenous fluids and electrolytes, jejunostomy feeding and blood transfusion. On the twenty-third postoperative day the patient became comatose and died of terminal bronchopneumonia.

CASE 2.—J. M., a white woman aged 72, was admitted to the hospital poorly nourished, and a diagnosis of pyloric ulcer and cholelithiasis was established. A Billroth II antecolic subtotal gastrectomy for benign ulcer and cholecystectomy was performed. The stomach was mobilized completely to the esophageal level, and the level of ligation of the left gastric artery was high. On the eighth postoperative day the patient's wounds dehisced and her condition rapidly deteriorated. At reexploration, a gangrenous gastric remnant was observed, which required resection and esophagejejunostomy with closure of the wound dehiscence. The patient died on the tenth postoperative day. Autopsy was not performed.

COMMENT

In Case 1, in order to perform a Billroth I anastomosis without tension, most of the left gastric and the short gastric arterial supply was sacrificed. Vagotomy and hiatus herniorrhaphy contributed to further destruction of the blood supply to the gastric remnant. More attention to duodenal mobilization rather than to extensive mobilization of the upper part of the stomach, might have averted death.

In Case 2, high mobilization was similarly performed, and a gangrenous gastric remnant was observed at reexploration.

Several authorities have stated that, because of rich vascular collateral in the stomach, extensive mobilization can be performed with impunity.

Michels listed three intrinsic arterial collateral routes: (1) arcus arterius ventriculi superior (anastomosis between the right and left gastric arteries along the lesser curvature); (2) arcus arterius ventriculi inferior (anastomosis between the right and left gastroepiploic arteries on the greater curvature), and, (3) arcus epiploicus magnus of Barkow (in the greater omentum). In addition, multiple extrinsic gastric collateral pathways exist.

These include two pancreaticoduodenal arcades and complex contributions from the inferior phrenic to the upper vasa brevia of splenic origin and to cardioesophageal branches of the left gastric.

Michels emphasized, on the basis of 200 specimens, the important role of the left inferior phrenic artery in collateral circulation of the spleen, stomach and esophagus. In most cases the esophageal branches of this artery showed communication with the short gastric arteries of splenic origin and with the cardioesophageal branches of the left gastric artery.

The blood supply to the gastric remnant is potentially threefold; i.e., it comes from the left gastric and inferior phrenic arteries and the vasa brevia from the splenic artery. It seems essential that at least one of these sources should be completely preserved and, preferably, a portion of a second source as well.

Michels has warned surgeons that anastomosis between the right and left gastroepiploics is absent in 10 per cent of subjects. This has great importance in relation to esophagogastrectomy. Michels further stated that in 25 per cent of the population the left gastric artery gives off a l

cially when vagotomy is concommitantly performed, and to focus attention on duodenal mobilization rather than extensive gastric mobilization to obtain an anastomosis without tension. Jealous safeguarding of one complete source of blood supply and, preferably, a portion of a second source as well, will protect the patient against the often disastrous sequelae of an avascular remnant.

This diagnosis should be considered after high subtotal resection, particularly when splenectomy or some other associated procedure at the hiatus has been performed, if the patient is not doing well from the third to the eighth postoperative day. Signs of peritonitis are usually not impressive. Low grade fever and leukocytosis are usually present. Finally, tachycardia, hypotension and precipitous deterioration herald frank gangrene. The syndrome may present as a gastrojejunocutaneous or a gastroduodenocutaneous fistula either through a drain site or a wound dehiscence, signifying disruption of the anastomosis.

It appears that a high index of suspicion of an avascular remnant, coupled with early reexploration and resection of the

CONCLUSIONS

Deux cas d'ischémie du moignon gastrique après gastrectomie subtotale sont présentés, avec une revue de la littérature et un résumé des voies artérielles collatérales à la portion proximale de l'estomac.

Un moignon gastrique avasculaire est évité par une bonne préservation de l'apport sanguin. Il faut s'efforcer de poser un diagnostic précoce suivi d'une ré-exploration.

CONCLUSIONI

Vengono descritti due casi di ischemia del moncone gastrico dopo resezione subtotale. Viene fatta una rassegna della letteratura su questo argomento ed un riassunto delle nozioni relative alla vascolarizzazione del tratto prossimale dello stomaco.

Si può evitare di lasciare un moncone avascolare risparmiando le arterie necessarie; la cura è rappresentata dal reintervento.

CONCLUSOES

Apresenta dois casos de isquemia dos restos estomacais pós gastrectomia subtotal. Faz a revisão da literatura e da circulação colateral da porção proximal Uma porção remanescente avascular é evitada pela preservação adequada de suprimento sanguineo. Como tratamento de escôlha indica a re-exploração precoce.

CONCLUSIONES

Presenta el autor dos casos de isquemia en el segmento gástrico después de una gastrectomía subtotal. Lo acompaña de una revisión de la literatura médica referente a tales casos y de un resumen de las vías de circulación colateral en la porción proximal del estómago. Se puede evitar el segmento gástrico avascular por una adecuada conservación del riego sanguíneo. Sugiere el autor el diagnóstico y la reexploración precoz para el tratamiento de elección.

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Corvisart thus played an important and honourable role in the development of percussion, and he also played a role in the discovery of auscultation, the great sister discovery. In 1801 a serious young medical student came up to Paris to study medicine and, attracted by the fame of the great teacher Corvisart, enrolled in his classes. This young student the world now honours as the immortal Laënnec. Corvisart took a friendly, fatherly interest in the young student, encouraging him in his work; and Laënnec in turn was filled with tremendous enthusiasm and respect for his teacher.

—*Major*

Extensive Resections of Huge Elephantoid Tissues

T. KANAKA RAJU, F.R.C.S. (Eng.), F.I.C.S.

RAJAHMUNDRY, INDIA

ELEPHANTIASIS is highly endemic in Rajahmundry and the neighboring districts and presents a variety of clinical manifestations. Elephantiasis may be defined as a progressive histopathologic state characterized by chronic hypertrophy of the deep fascia and the hypodermic and dermal connective tissues, primarily due to obstruction of the lymphatics. Some patients with elephantiasis of the legs and scrotum, or both, are so crippled that they are completely bedridden owing to the enormous size and weight of the elephantoid tissues, not to speak of the periodic fever in some cases that results in deep abscesses. Elephantoid tissues in some cases weigh more than the patient himself.

This paper which is based on the work done by my associates and me at the Government Hospital, Rajahmundry, South India, during the past six years, [illegible] photographs. These operations, the technic of which I have standardized, have given relief to many.

The clinical recognition of this condition is easy, although microfilaria are rarely present in the blood of the patient by day or by night. Further, the dead or living falarial adult worms could not be demonstrated in patients showing these manifestations. I suggest, therefore, the possibile association of hemolytic streptococci and staphylococci with this disease, and that these organisms are responsible for these manifestations and for the repeated attacks of inflammation and coexistent anemia that are invariably present in these cases.

CASE 1 (elephantoid scrotum). — The patient was a local Raja aged 17. A preoperative photograph could not be taken because of a sentimental objection. Photographs of the removed tissue are presented to give an idea of the size of the scrotum (Fig. 1). The

Fig. 1.—Excised specimen (see text).

scrotum weighed 112 pounds, while the patient's weight after the operation was only 92 pounds.

The patient was thoroughly examined and prepared for operation, which was undertaken, in spite of the huge size and weight of the elephantoid tissue, because of the relatively small size of the pedicle by which the whole growth was suspended.

Unless the incisions made in the operation are well planned, shock may result, owing to hemorrhage and the time factor. With a well planned incision, this patient required, as an adequate precaution, only 200 cc. of whole blood and 300 cc. of plasma during the operation, despite the immense size of the scrotum. Seven cc. of light Nupercaine (1:1,500), administered spinally, was the anesthetic used.

Operative Technic.—Briefly, the technic of the operation is as follows: A total monoblock radical excision of the scrotum is done, including the thickened penile skin. Three points are selected: one on each side of the symphysis pubis and a bit beyond the elephantoid tissue, and the third in the perineum.

Three artery forceps are clipped at the three points. These points represent an inverted triangle surrounding the pedicle of the elephantoid tissue. An assistant keeps taut the two artery forceps on the lower part of the outer abdominal wall. The incision between the two points is deepened through the deep fascia, i.e., the sheaths of the rectus abdominis and pyramidalis muscles. The muscles are exposed, and the spermatic cord on each side is lifted up by means of gauze or Lane's forceps. The bleeding points are ligated. Thus, through an inverted triangular surrounding incision, the whole mass of elephantoid tissue and also a bit of surrounding skin will be excised. As has been mentioned, this consists in dividing the base of the tumor as a first step, so exposing, identifying and isolating the cords. By following the cords downward one locates both testes which may be wrapped in hot towels. The penis must be well mobilized, to its very root.

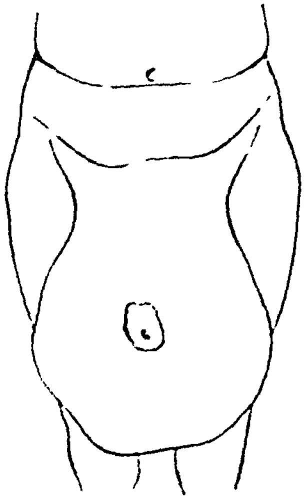
4. A filarial scrotum is usually associated with a hydrocele and sometimes with a hernia. If there is a hernia, it is wise to deal with it at an earlier sitting, before undertaking the scrotal excision.

5. The testes are then transplanted into subcutaneous pouches of the thigh without tension or pressure, and the edges of the wound are so brought together as to embrace the penis in a T-shaped manner. The penis is treated with a Thiersch skin graft.

6. An indwelling catheter is a very useful splint to keep the penis taut, with a plug which may be taken out once in every six hours to release the urine from the bladder. This is of great help in keeping the bladder empty without frequent catheterization. The indwelling catheter may be removed in a day or two.

7. Sepsis of the bladder and stone formation are only theoretical possibilities if only a catheter is used for a few days. Sloughing of the urethra and fistula formation do not supervene.

This complication, i.e., fistula formation may result if the testes are not placed in their proper pouches in the thigh but allowed to press upon the urethra, with a



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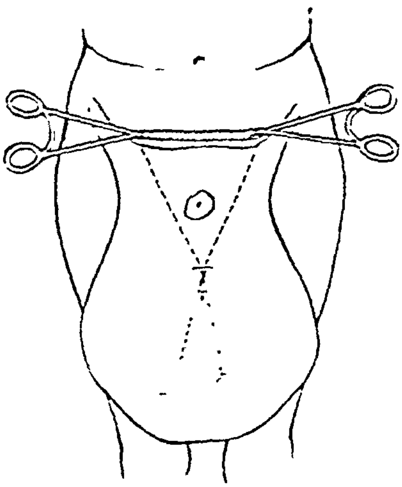

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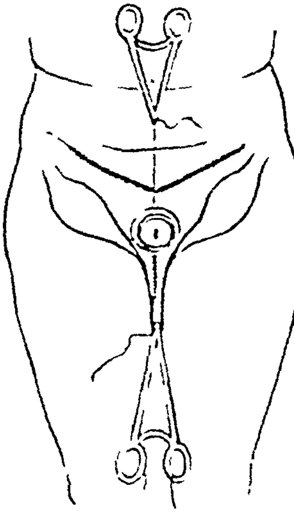

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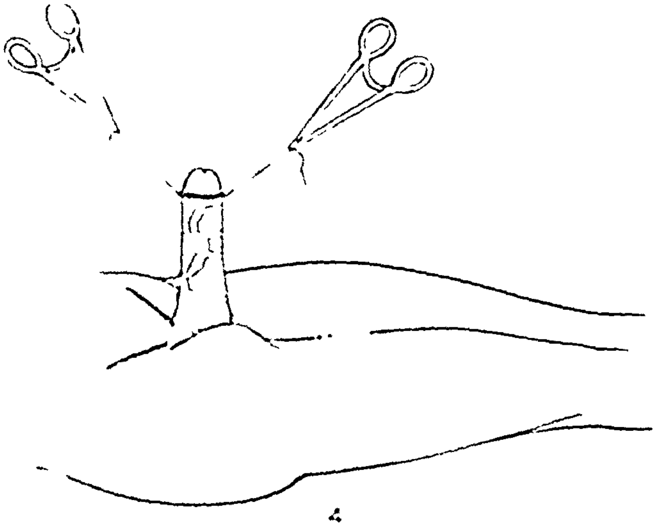

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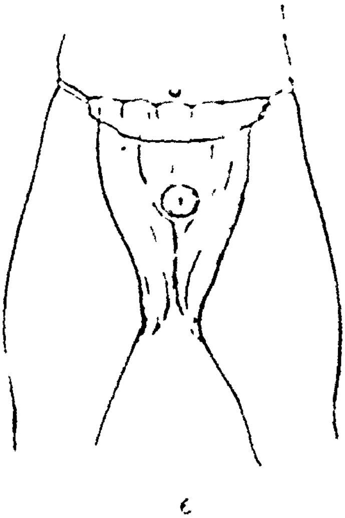

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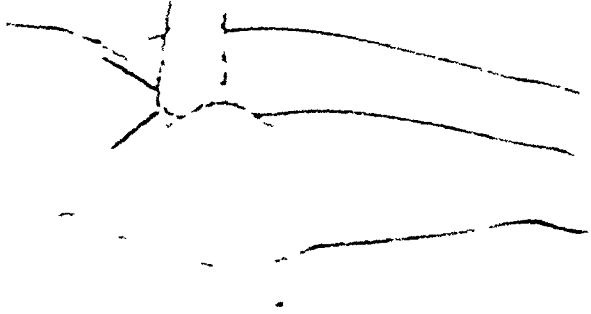

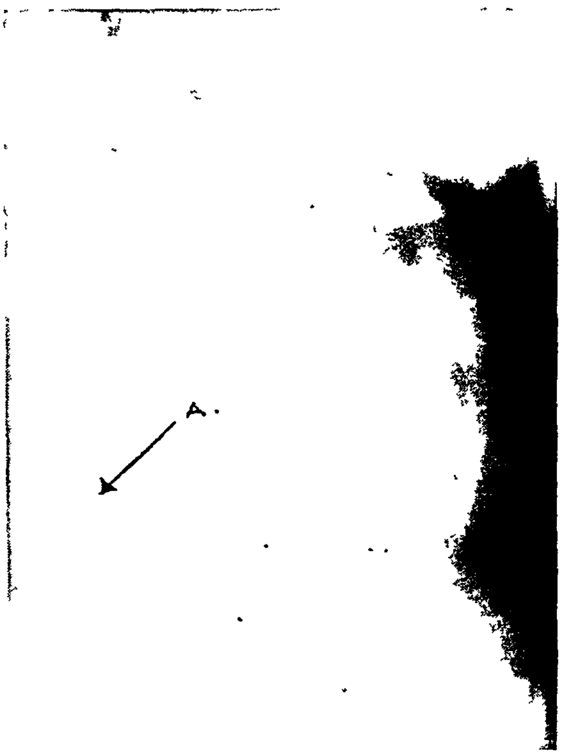

Fig. 1.—Note considerable narrowing of gastric antrum at point *A*.

for sodium chloride was 610 mg. and that for proteins 17 mg. There was a slight trace of albumin. A Kline test of the spinal fluid gave negative results. The gold curve was 1111000000.

The blood cell count on December 18 revealed 13.9 Gm. of hemoglobin. The erythrocyte count was 4,500,000 per cubic millimeter and the leukocyte count 5,000, with 58 per cent polymorphonuclears, 32 per cent lymphocytes and 10 per cent eosinophils. The hematocrit reading was 43 volumes per cent. On January 2 the blood count was repeated. The value for hemoglobin was 12.4 Gm.; the red blood cell count was 3,680,000 and the white blood cell count 10,100, with 69 per cent polymorphonuclears, 18 per cent lymphocytes and 13 per cent eosinophils.

The Kahn test gave negative results.

The value for plasma chlorides was 104 meq., for sodium 144 meq. and for potassium 5.2 meq.

The urine had a specific gravity of 1.010. There was a trace of albumin. There was no sugar. The sediment was normal.

The urinary porphyrins were negative. No porphobilinogen was observed.

The nonprotein nitrogen level was 27 mg. and the serum bromide level 37.4 mg.

The stool was formed, soft and brown. There was a trace of mucus. There was no occult blood, and tests for ova and parasites gave negative results.

Gastric analysis with alcohol on December 21 revealed achlorhydria, with a trace of blood. This was repeated on December 31, with the same results.

Roentgen Examination. — Roentgenograms of the chest and esophagus were normal. An upper gastrointestinal series revealed marked spasm and narrowing in the distal third of the stomach, which was pliable. With hyperactive peristalsis, barium did pass through the narrowed portion of the stomach into the duodenum. The duodenal bulb and the descending portion of the duodenum were much larger in diameter than is ordinarily observed, and there was stasis in the first and second portions of the duodenum up to the juncture of the second and third portions, at the approximate location of the superior mesenteric vessels. A diagnosis of arteriomesenteric duodenal compression

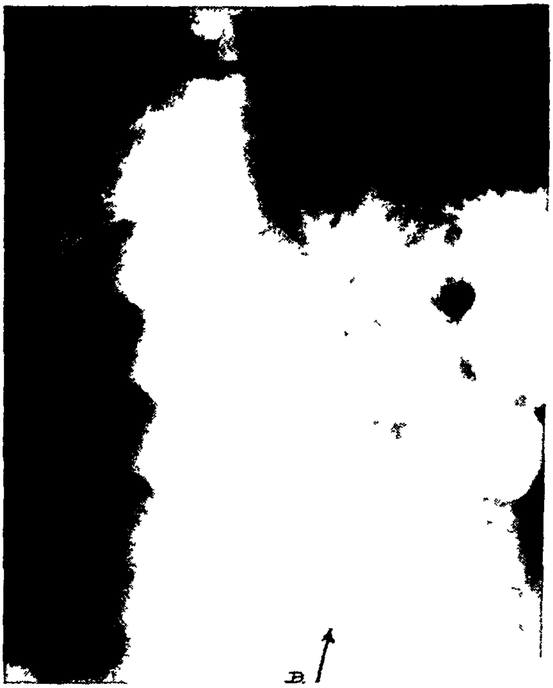

Fig. 2.—Note arteriomesenteric duodenal compression at point *B*.

and antral inflammatory disease was made (December 19).

Roentgen studies of the skull showed no abnormality.

On Jan. 2, 1957, a repeat upper gastrointestinal series revealed persistent narrowing of the antrum. There was now only slight distensibility with peristaltic activity. A suggestive crater-like accumulation was noted in the area of deformity on deep compression. The rugal pattern was coarsened throughout. At one hour, most of the barium remained in the stomach. It was apparent that the antral deformity had increased in size.

Operation was performed on January 4. When the abdomen was opened, a tumor mass involving the pyloric antrum was revealed. The mass was about 5 inches (12.5 cm.) long and four inches (10 cm.) thick. It was firm, with a rubbery consistency. There was edematous adherent omentum about the mass. The gross appearance of the tumor was suggestive of a chronic granuloma. The duodenum was markedly enlarged to the point at which the superior mesenteric vessels passed over the third portion of the duodenum. Beyond this point the caliber of the duodenum was normal.

A high subtotal gastrectomy was performed, with an isoperistaltic antecolic gastrojejunos-

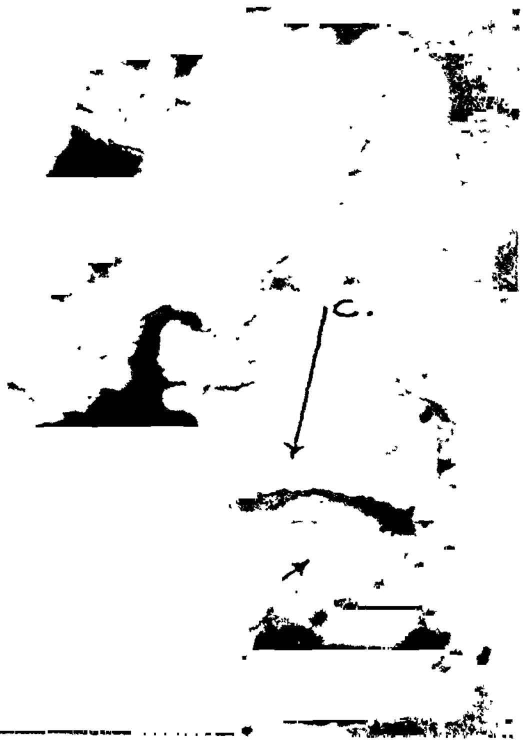

Fig. 3.—Note pronounced thickening of stomach wall at point C.

ZUSAMMENFASSUNG

Eine Durchsicht der Literatur ergibt, dass nur 35 Fälle von eosinophilem Granulom des Magens veröffentlicht worden sind. Das gleichzeitige Bestehen einer arteriomesenterialen Verlagerung des Zwölffingerdarms ist bisher nicht berichtet worden.

Die deutliche Anamnese einer Allergie verleiht der Theorie einer allergischen Aetiologie der Erkrankung weitere Unterstützung.

Die hochgradige teilweise Verlagerung des Zwölffingerdarms führte zu einer krankhaften Gehirnveränderung, die nach chirurgischer Behebung der Obstruktion verschwand.

Wenn die Diagnose eines obstruierenden eosinophilen Granuloms des Magens gestellt ist, kann durch konservative Behandlung mit Steroiden die Notwendigkeit eines chirurgischen Eingriffs umgangen werden.

In dem hier dargestellten Fall ergab sich die Indikation zur Operation aus dem gleichzeitigen Bestehen einer Obstruktion des Magens und des Zwölffingerdarms.

RÉSUMÉ

Une revue de la littérature n'a révélé que 35 cas de granulomes éosinophiles de l'estomac. La présence concomitante d'une compression duodénale artériomésentérique obstruante n'a jamais été rapportée à la connaissance de l'auteur.

Les études sur l'allargie confirment la théorie allergique de cette affection.

L'obstruction partielle prononcée a provoqué un état encéphalopathique qui a disparu après la suppression chirurgicale de l'obstruction.

Un traitement conservateur aux stéroïdes peut éviter l'intervention chirurgicale en cas de diagnostic d'obstruction par granulome éosinophile.

Dans le cas ici rapporté, l'indication opératoire a été posée sur la base d'une obstruction à la fois duodénale et gastrique.

RESUMEN

Tras una revisión de la literatura sólo se encuentran descritos 35 casos de granuloma eosinófilo del estómago; y ninguno en el que éste coincida con una obstrucción duodenal por compresión de la arteria mesentérica superior.

El enfermo presentado tenía antecedentes alérgicos claros, lo que va en favor de la teoría alérgica del granuloma; la obstrucción, por otra parte era de tal grado que dío lugar a una encefalopatía que cedió tras el tratamiento quirúrgico de aquella.

Cuando se hace el diagnóstico de una obstrucción por granuloma eosinófilo del estómago el tratamiento con esteroides puede obviar la necesidad de una operación.

En el caso descrito el tratamiento quirúrgico era imprescindible debido a la obstrucción duodenal además de la del estómago.

RIASSUNTO

In una rassegna della letteratura è stato possibile trovare solo 35 casi di granuloma eosinofilo dello stomaco; non si è mai trovata però l'associazione di questa lesione con l'occlusione arteromesenterica.

Nel caso presentato esistevano elementi tali da far pensare a una genesi allergica dell'affezione. L'ostruzione, di grado notevole, aveva causato una encefalopatia che si risolse con l'intervento chirurgico.

Se si riesce a fare la diagnosi di granuloma eosinofilo dello stomaco, è possibile evitare l'intervento chirurgico mediante il trattamento con steroidi. Nel caso riferito l'indicazione all'intervento era determinata dalla presenza dell'ostruzione gastrica e duodenale.

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Evaluation of Plication in the Treatment of Peritonitis and Its Aftermath of Intestinal Adhesions

THOMAS B. NOBLE, M.D., F.I.C.S.†

INDIANAPOLIS, INDIANA

The author reviews his technic of plication of the intestines in the treatment of peritonitis, citing, in addition to his own published reports on the procedure, the opinions of many others who have reported success in its use, either in the literature or by personal communication. He points out that the operation has been highly effective in reducing the mortality rate of advanced peritonitis from 100 per cent to below 4 per cent, and emphasizes the fact that as yet there is no effective alternative procedure for dealing with advanced peritonitis and its aftermath of intestinal adhesions.

MARTIN has stated in the *Southern Medical Journal* that "plication has never been given a fair trial to determine its true value because few are bold enough to institute such a seemingly radical procedure." He cited 3 human patients with peritonitis: peritonitis (1) due to perforation of the sigmoid, (2) peritonitis with obstructions due to traumatic perforation, and (3) peritonitis due to intestinal obstruction from many adhesions (plus cardiac arrest). Later, ten dogs were used as controls, being plicated in a state of health.

His 3 human patients recovered without recurrence of obstruction. He was not satisfied with the dog experimentation. He considered plication to have failed when elected autopsy showed that not all loops remained in plication. His form of plication did not conform to the method I devised and have described exactly. He followed a method I have condemned, for a stated reason.

Martin's conclusion that "a satisfactory solution has yet to be devised for the problem of postoperative recurrent intestinal obstruction" is best answered in the words of a Pennsylvania surgeon, who kindly sent me the reprint: "I feel it a disgrace to write a paper entitled Clinical and Experimental Evaluation, and then base it on three clinical cases and ten dogs."

Martin's article and other published inaccuracies pose a challenge. It falls to my lot to write this answer, since I developed the plan of treatment that includes plication in 1920. My thirty-eight years of experience and the experiences of many men of many countries who have adopted this approach to the unhappy problems of peritonitis should indicate a "fair trial."

Unanswered need calls for new and unique therapy. To prove the measure of a method of treatment, we may apply it to the severest and "hopeless" degree of the pathology. The photograph reproduced in

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†Deceased.

Submitted for publication Feb. 15, 1958.

Figure 1 was taken in the surgery thirty-six hours after a gunshot wound of the intestine had initiated the severest peritonitis.

The patient is alive, well and symptom-free continuously during the more than twenty years that have passed since the picture was made.

The photograph shown in Figure 2 was made in the surgery during the lysis before total plication that has put an end to the endless chain of operations and hospitalizations for **intubation** that had created an "intestinal cripple." This patient now enjoys a "normal" intestinal physiology, without reservation in meaning.

Perhaps unfortunately, I developed the correlated preoperative preparation, the technic of plication, and the postoperative care that may require aggressive use of pituitrin. Not all surgeons accept all phases of the work at first.

Several years ago the Cleveland Clinic Quarterly printed a diagram of "the Noble plication" that was wrong. My request for correction was not successful. The 1955 Year Book of Surgery printed the same diagram. Then Martin perpetuated the mistake. All were labeled "the Noble plication," in spite of the fact that I have written careful description of the correct method of plication and have advised specifically against the incorrect plan. This exhibition, therefore, is needed.

Fig. 1.—Photograph taken in operating room thirty-six hours after gunshot wound of intestine had initiated extremely severe peritonitis.

Fig. 2.—Photograph taken in operating room during lysis before total plication (see text).

The use of laboratory animals to simulate human experience surely accounts for these inadequate, incorrect, improper and disability-producing technics that are *not* the Noble plication. The *intestine of the* dog hangs by its mesentery from the superior wall of the abdomen, not a posterior wall. Loops cannot fall upward to become stuck at the root of the dog's mesentery.

The inflamed intestine of the human being will adhere in chaotic disorder as the victim lies in bed. Wild entanglements, angulations and increasing obstructions become the pathologic picture of peritonitis in man.

The ability of the laboratory animal to form and then digest adhesions is not the same as that of man. The ability of the animal to dissolve sutures is different, also.

Ignoring repetition, and for the sake of clarity, the two accompanying diagrams (Fig. 3) are correct outlines of (1) the first wing next the cecum and (2) total plication.

Surgeons who completely understand and use the correct form of plication have responded to a request for their considered judgment of the proper place of plication in the treatment of peritonitis and its aftermath of intestinal adhesions. They write as follows:

A. R. Killam, M.D., New Rochelle, New York: "When a man describes a surgical procedure, others try it and find that it fails; those who then condemn the procedure may in truth be condemning only their knowledge of the procedure, not the procedure itself."

Jacques Teinturier, M.D., Casablanca: "As one of Professor Thomeret's pupils, who made known in France and Europe the 'Noble operation,' I have had the occasion to operate and save the lives of numerous patients thanks to this technic. Last year I made an experimental study of your operation upon six young dogs, in order to see the influence of intestinal plicature upon the growth of the animal . . . The growth of the animal was absolutely normal . . . A month ago I operated an infant 20 months old suffering from obstruction by purulent peritonitis (pyocyaneus bacillus), and he recovered simply . . ."

E. Vincent Askey, M.D., Los Angeles, California: "Plication fills a definite need in the treatment of peritonitis and adhesions. I have had nothing but success in its use. The few cases that I have had any trouble with have been because of not plicating more of the bowel at the first operation. When plicating all raw areas I have had no trouble . . . I do not deem this a "bold" procedure at all, but on the contrary, it is a life saving procedure that cannot be ignored . . . My experience as yet, of course, is limited but I would estimate that I have plicated 50 different cases —with success."

C. D. L. Cromar, M.D., Ottawa: "The over all mortality rate in peritonitis even at the present time with all our antibiotics was as high as 67% . . . I am sure now that you have found the answer to at least the mechanics of the condition."

P. J. Kuyjer, M.D., Universiteit Van Amsterdam: "It is a pleasure for me to send you herewith a copy of my article on your operation . . . Netherlands Medical Journal. We have had success with it, as several practitioners from the county sent us their patients with recurrent obstruction to be operated in our clinic. Other clinics now have started to use your procedure too. We have been able to help more patients than have been described in the article and we are really happy having introduced your useful procedure."

Louis Hollender, M.D., Professeur Agrege de Chirurgie, Universite, Strasbourg: "We would be greatly honored and very happy to have you here at the Surgical Clinic of the University of Strasbourg. I was the first to perform your operation in Strasbourg. Since that time

I have done about 25 Noble. So I wouldn't miss the opportunity to discuss with you that question."

André Berner, M.D., Wettingen, Switzerland: "When I worked in Aarau I had the opportunity of operating about 40 patients according to your technics and your methods . . . I have obtained dramatic success both in acute and chronic ileus."

Otis Duck, M.D., Mars Hill, North Carolina: ". . . on examination today her peristalic sounds were normal, her abdomen soft, she is afebrile and looks better than I have seen her in several years. She has gained 5½ pounds since you operated her (about 3 weeks). She has had no Demerol or other narcotic since leaving the hospital. We used the Noble technique for giving her the cold facts regarding her former addiction problems."

Elden C. Weckesser, M.D., Cleveland, Ohio: "At our operation the entire small bowel was a matted mass of adhesions with *several areas of volvulus and many thickened and dilated loops.* She has done fine after complete plication. I am hopeful that we have restored a normal life to this young lady. No other method available today would have been of benefit. I tell you of this only to let you know that I

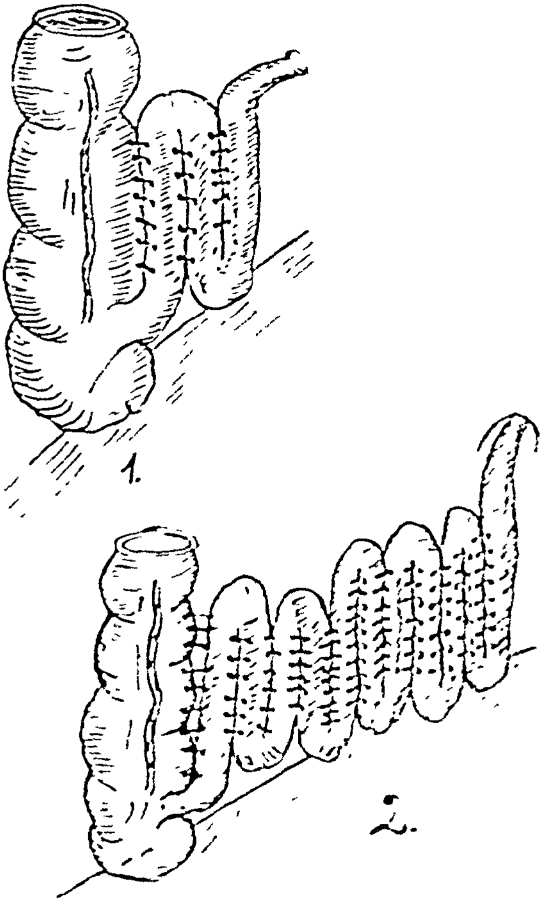

FIG. 3.—Drawings indicating technic of Noble plication. *1*, first wing next cecum points to patient's chin (see text). *2*, completed total plication.

same results and you understand why we are completely sold on the technique. We do not consider this operation to be 'bold.' In the light of uniform excellent results we have no choice and now would feel derelict in our duty should we fail to employ this surgery for which we know no substitute."

Avery P. Rowlette, M.D., Moberly, Missouri: "I was fascinated by the report on your little three-year-old with peritonitis. I must admit that your first communication indicating the use of pituitrin in peritonitis struck me with somewhat of a bombshell: I have recovered and used it. It worked beautifully and I intend to continue to use pituitrin."

L. A. Alesen, M.D., Los Angeles, California: ". . . I suggested the use of the term 'post-plication' syndrome to describe the group of symptoms simulating a recurrence of obstruction, which are encountered in gradually lessening degree. I have never seen a patient require reoperation whose intestines were completely plicated, although I suppose such a condition could arise."

Georges Thomeret, M.D., Paris, France: "The treatment of peritonitis is the treatment of multiple foci of localization. If one stops after liberating all adhesions then the intestine will again become adhered in an anarchical way, obstructions will reform and the death of the patient will follow. But, if one finishes by plicating the small intestine, one assures permanence of results: normal functioning of the intestine."

Now for a repetition of my own statistics: More than 300 patients with a fatal degree of peritonitis at first acquaintance have passed through my hands. Less than 4 per cent have died.

Nearly ten times that number have needed plication for lesser degrees of earlier peritonitis, multiple adhesion-obstructions and recurrent obstructions from adhesions. These range from "first offenders" to the patients undergoing the forty-fourth operation and hospitalization for obstruction in the same patient!

In the absence of peritonitis, the mortality rate should be that of good anesthesia. The morbidity or postoperative disability should not include intestinal dysfunction.

Figure 1 shows well the terminal state of peritonitis, from which there is no spontaneous retreat. There has been only one successful form of therapy here, as has been mentioned by many.

The obstructions being multiple, the *value of intestinal decompression by intubation* is obviously little. I use it preoperatively for the shortest possible time. The statistics generally cited for the use of decompression do not include this degree of disease.

That the incidence of this formerly 100 per cent fatal disorder resulting from advanced peritonitis has been reduced below 4 per cent has been the thrilling experience of my thirty eight years' use of plication and the method of its employment. That mastery over recurrent obstructions has been given the acquainted surgeon is equally gratifying. Nearly 500 surgeons over the world have reported comparable records of success in a fine correspondence.

Shall Martin's statement then, go unanswered when he publishes "satisfactory solution of these problems has yet to be devised"?

Or shall we go as far as Jere Lord went when he published the statement, "If Noble's operation will help all of these patients as his writings attest, then his operation is truly miraculous"?

A last word: At the time of writing there is no alternative for the problems of the treatment of peritonitis and its aftermath of intestinal adhesions.

RÉSUMÉ

L'auteur passe en revue sa technique de plicature des intestins dans le traitement de la péritonite, ajoutant aux résultats des rapports qu'il a publiés à ce sujet, les opinions de chirurgiens ayant adopté sa méthode. Il souligne le fait qu'elle a permis d'abaisser de 100% à moins de 4% le faux de mortalité des péritonites graves.

ZUSAMMENFASSUNG

Der Verfasser gibt einen Überblick über seine Technik der Darmfaltung zur Behandlung der Bauchfellentzündung. Er weist auf seine eigenen Veröffentlichungen und auf die Anschauungen vieler anderer Autoren hin, die entweder in der Literatur oder durch persönliche Mitteilungen sich über die Erfolge des Verfahrens geaussert haben. Er hebt hervor, dass die Operation in hohem Masse dazu beigetragen hat, die Sterblichkeitsquote der vorgeschrittenen Bauchfellentzündung von 100 Prozent auf unter 4 Prozent herabzusetzen, und dass es bisher kein anderes wirksames Verfahren zur Behandlung der vorgeschrittenen Bauchfellentzündung und ihrer Folgezustände, der Darmverwachsungen, gibt.

RESUMEN

casos o en los de adherencias intestinales consecutivas.

RIASSUNTO

L'Autore riferisce i risultati ottenuti con la sua tecnica di plicatio intestinale nella cura della peritonite, in base alla esperienza sua e a quella di altri che hanno usato con successo lo stesso metodo. L'intervento è efficacissimo nel ridurre le quote di mortalità delle peritoniti gravi dal 100% a meno del 4%, e nel prevenire le aderenze intestinali successive.

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Cardiovascular Surgery

Infarction of the Renal Artery

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AND

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NEW YORK CITY, NEW YORK

IN spite of the advanced clinical methods employed nowadays in the investigation of disturbances of the urinary tract, the diagnosis of renal infarction remains a difficult and challenging problem. Up to now, no more than one hundred references to proved clinical cases of infarction of the renal artery have appeared in the world medical literature. We should like, therefore, to report 2 additional and unusual cases we have observed.

From the pathologic standpoint, two main types of renal infarcts are accepted; the venous and the arterial type. The venous type is secondary to obstructive phenomena (mechanical and/or infections) of the renal vein. The arterial type is due to absence of blood flow to the kidney. Both types can be total or segmental, unilateral or bilateral. When an arterial renal infarction occurs, the affected area appears yellowish gray because of anemia. If the infarction is partial or segmental, then the uninvolved tissue is surrounded by a reddish halo, which represents the congestive response of neighboring normal renal parenchyma. Microscopically, varying degrees of cell necrosis and coagulation are observed. There is generalized edema throughout the intertubular connective tissue, and active diapedesis of phagocytes occurs in the interlobular and arcuate vessels. Fibrosis or scar formation is the usual end result. Abscess and/or cyst formation have also been described.

There are no signs and symptoms that are pathonogmonic of infarction of the renal artery. Not infrequently the clinical picture is quite bizarre, mimicking acute intra-abdominal syndromes of a different nature. The incidence of renal infarct is greatest between the ages of 30 and 50 years, and the lesion occurs with equal frequency in men and women. In 40 per cent of the patients the infarction was bilateral. Pain is the commonest symptom and is initially located in the costovertebral angle on the side of the involved kidney (Fitzgerald and Mullins). The pain is usually severe and continuous, radiating throughout the abdomen. Perspiration, dizziness, nausea, vomiting, fever and headaches often accompany it. According to Regan and Crabtree, gross hematuria is present in 10 per cent and microhematuria in 50 per cent of the patients with

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renal artery infarction. Occasionally tachycardia and transitory or persistent hypertension may be observed. Leukocytosis, with more than 20,000 leukocytes per milliliter of blood, is an important sign, and according to Regan and Crabtree the count may reach as high as 73,000 per milliliter. When massive bilateral infarction of the renal artery is present there is sudden onset of severe pain in both flanks, as well as secretory anuria. The pyelocalyceal patterns outlined by retrograde pyelographic study are usually within normal limits. In the terminal stages anemia, azotemia, hyperkalemia, hypochloremia and acidosis develop.

From the etiologic point of view, the following clinical entities have been observed to predispose and sometimes cause the development of renal artery infarction: (a) circulating emboli originating in thrombi of the cardiac wall; (b) embolic bacterial endocarditis; (c) atheromatous plaques of the renal arteries; (d) periarteritis nodosa; (e) bacterial arteritis; (f) obliterating thromboangiitis; (g) syphilitic endarteritis; (h) blood dyscrasia or polycythemia, and (i) persistent vascular spasm

Two types of infarction of the renal artery, with different etiologic factors, clinical pictures, urographic abnormalities and pathologic changes, are represented by the 2 cases here reported: in the first case, massive bilateral renal infarction resulting from widespread disease of the renal arterial tree, in an elderly patient, and in the second, partial unilateral infarction in a relatively young patient with a history of rheumatic heart disease.

There are no pathognomonic signs and symptoms of infarction of the renal artery. A tentative diagnosis, however, may be greatly assisted by the clinical history, the physical signs, the laboratory data and the results of urographic study. Diseases to be ruled out in differential diagnosis are renal abscess, pyeloureteral colic, acute intra-abdominal syndromes (e.g., intestinal infarction), intermittent hydronephrosis, spondylitis and lower nephron nephrosis secondary to trauma and or reaction to blood transfusion. Prog-

dying flower. Translumbar or femoral angiograms should show, in some instances, complete or partial absence of the renal vascular tree.

The following conditions may present difficulty in differential diagnosis and should be ruled out when there is clinical suspicion of renal infarction: (a) renal abscess; (b) pyeloureteral colic; (c) acute intra-peritoneal syndromes (intestinal infarction, etc.); (d) intermittent hydronephrosis; (e) spondylitis, and (f) lower nephron nephrosis secondary to trauma and/or reaction to blood transfusion.

Prognosis depends on the origin and extent of the infarct. The massive bilateral process is fatal within two to three weeks. Partial renal infarction, unilateral or bilateral, is followed by fibrosis or scarring of the involved area. Abscess or cystic formations may also be the end result. Prognosis for the latter group is usually good, because sufficient functioning renal parenchyma remains to support life.

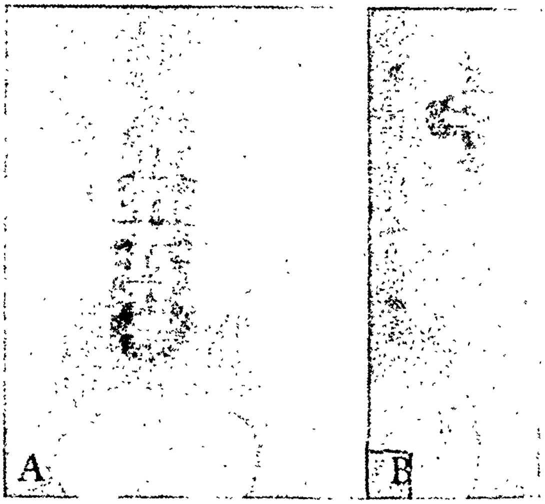

Fig. 1 *(Case 1)*.—*A*, forty-minute intravenous urogram revealing normal function of right kidney. No evidence of excretion by left kidney. *B*, left retrograde pyelogram disclosing relatively normal pyelocalyceal system.

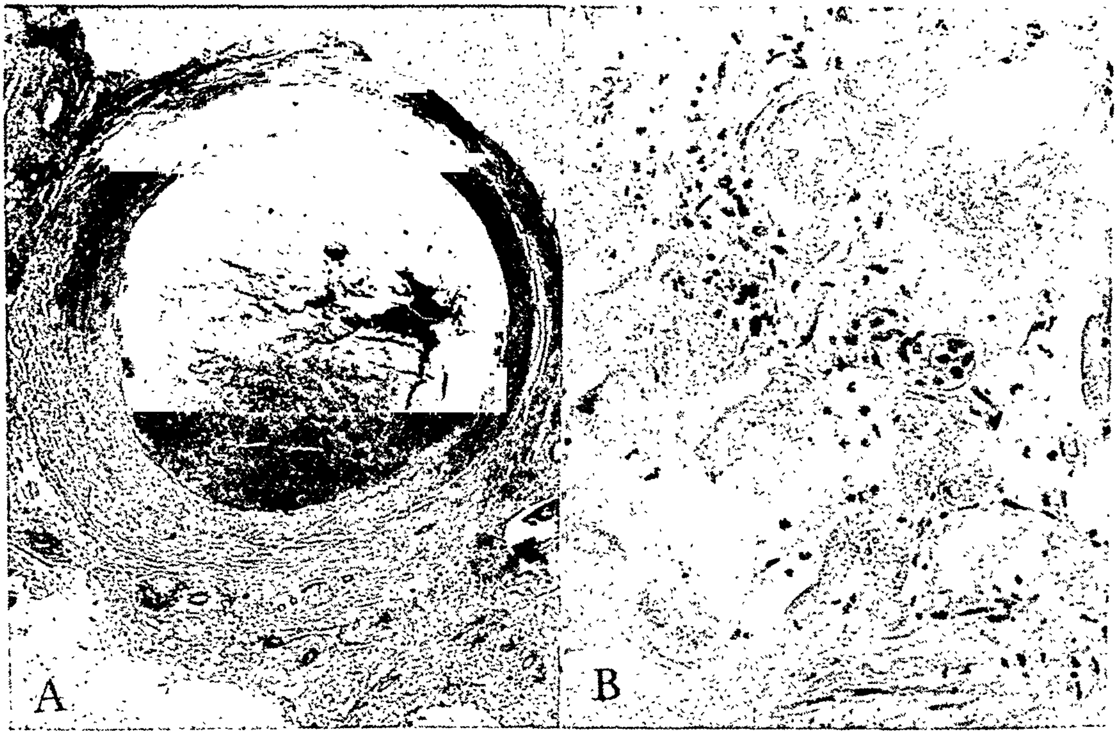

Fig. 2 *(Case 1)*.—*A*, photomicrograph of cross section of main renal artery of left kidney. The lumen is completely obliterated by thrombus adherent to wall. *B*, high power field showing area in left kidney with coagulation necrosis of tubules and nuclear fragmentation.

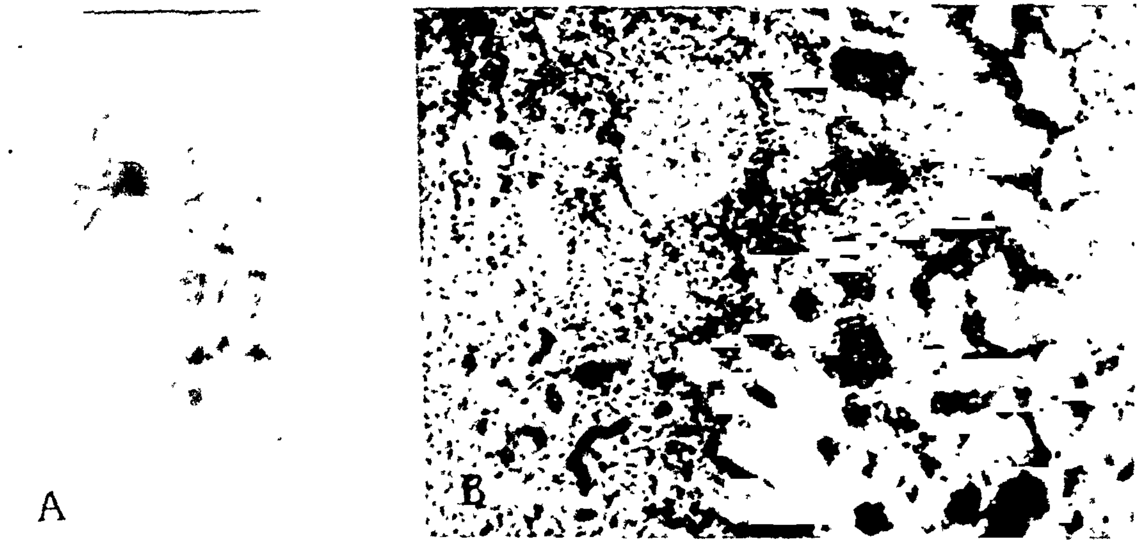

Fig. 3 (Case 1).—A, right retrograde pyelogram made after left nephrectomy at time when patient was anuric. Note "wilting" of calyces. *B*, photomicrograph of biopsy specimen from right kidney, showing edge of infarct. Note necrotic tubules on right side and diffuse infiltration of stroma with lymphocytes.

REPORT OF CASES

sented a gray-yellowish color, which became dying flower. Translumbar or femoral angiograms should show, in some instances, complete or partial absence of the renal vascular tree.

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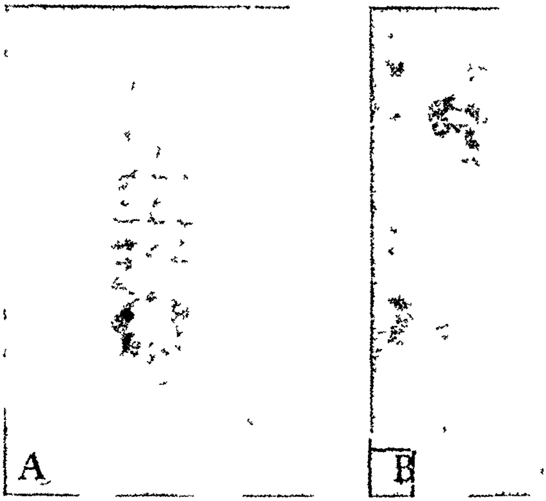

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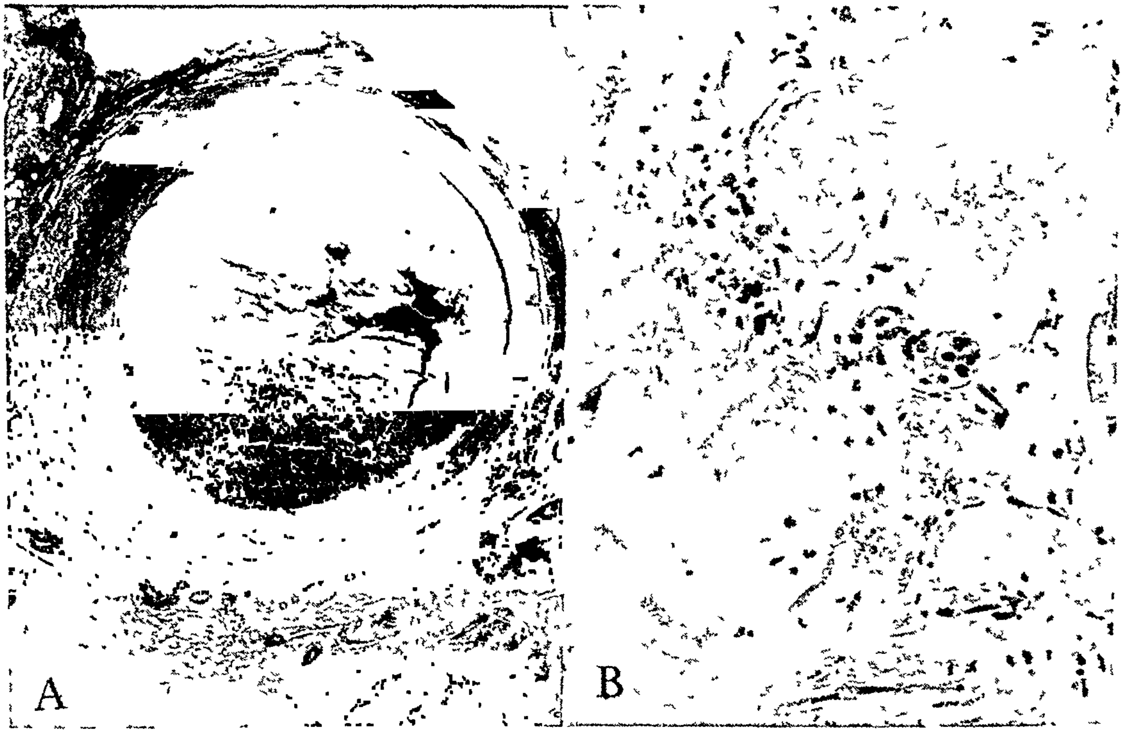

Fig. 2 *(Case 1)*.—*A*, photomicrograph of cross section of main renal artery of left kidney. The lumen is completely obliterated by thrombus adherent to wall *B*, high power field showing area in left kidney with coagulation necrosis of tubules and nuclear fragmentation.

bilatéral massif chez un malade d'un certain âge avec artériolite rénale bilatérale diffuse. L'infarctus rénal bilatéral massif, dû à une affection diffuse du tronc de l'artère rénale, est caractérisé par les symptômes suivants: fortes douleurs abdominales, images urographiques pathologiques, absence de pulsation de l'artère rénale, rein présentant un aspect de "purée de foie gras," développement d'un état analogue dans l'autre rein, avec éventuellement issue fatale. Une forte leucocytose, l'absence d'hypertension, et la guérison opératoire normale des deux incisions sont également à noter.

Dans le second cas il s'agit d'un infarctus unilatéral partiel chez un malade relativement jeune. L'opération a révélé un kyste d'aspect hémorragique. Des embolies répétées du rein ou d'autres organes peuvent se présenter chez les malades atteints de lésions rhumatismales du coeur.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

nische Beobachtungen sind die ausgesprochene Leukozytose, das Fehlen einer Blutdruckerhöhung und das normale Heilen beider Operationsschnitte. Der zweite Fall ist das Beispiel eines partiellen, einseitigen Infarkts der Nierenarterie bei einem verhältnismässig jungen Patienten mit der Vorgeschichte einer rheumatischen Herzerkrankung. Das plötzliche Einsetzen von Schmerzen mit nachfolgender makroskopischer Hämaturie, ein unnormales urographisches Bild, das eine Nierengeschwulst andeutet, und die Beobachtung einer wie eine Blutung aussehenden Zyste bei der Operation sind die charakteristischen Befunde des einseitigen partiellen Niereninfarkts. Bei Kranken mit rheumatischem Herzleiden kann es zu wiederholten Embolien in der Niere oder anderen Organen kommen.

RESUMEN Y CONCLUSIONES

Se presentan dos formas de infarto de

twenty days prior to admission to the hospital, a massive infarct of the left renal artery developed, for which nephrectomy was performed. A month after the first episode a similar lesion developed on the right side, which was proved by biopsy. The patient died in uremia. The possibility of syphilitic arteriolitis as an etiologic factor was considered, but autopsy was not performed.

Case 2.—A 30-year-old married woman suddenly felt stabbing pain in the region of the right kidney, accompanied by fever, spasm of the abdominal wall and leukocytosis. A diagnosis of right renal colic was made. Twenty days later gross painless hematuria developed. There was a history of mitral stenosis secondary to rheumatic heart disease. The patient was admitted to the hospital on March 13, 1940, and a complete urologic examination was performed. Cystoscopically, blood was seen to come from the right ureteral orifice. A retrograde pyelogram was obtained and disclosed changes in the right pyelographic pattern consistent with neoplasm, cyst or abscess (Fig. 4 *A*). Right nephrectomy was performed, and the operative and pathologic diagnosis was hemorrhagic cyst (Fig. 4 *B*). The patient had an uneventful recovery. The surgical specimen was reexamined ten years after nephrectomy, and it was discovered that the original pathologic diagnosis had been incorrect. At this time a diagnosis of partial arterial renal infarction, probably due to an embolus of cardiac origin, was made (Fig. 4 *C*). The patient died 11 years after the nephrectomy of a cerebral embolus which had also originated in the heart.

COMMENT

In this case, that of a 30-year-old woman with a past history of mitral stenosis, in whom an embolus apparently shot into the right renal artery, resulting in partial infarction of the right kidney. Because of pain and hematuria, she was examined, and an expanding mass was observed in the right kidney. The kidney was removed, and a diagnosis of hemorrhagic cyst was made. Reexamination of the specimen ten years later led to a change in diagnosis from hemorrhagic cyst to renal infarction. The patient died a year later of a cerebral embolus of cardiac origin.

RESUME ET CONCLUSIONS

Deux types d'infarctus de l'artère rénale, comprenant des facteurs étiologiques et des tableaux cliniques différents, des anomalies urographiques et des modifications pathologiques, sont présentés. Le premier cas est un exemple d'infarctus

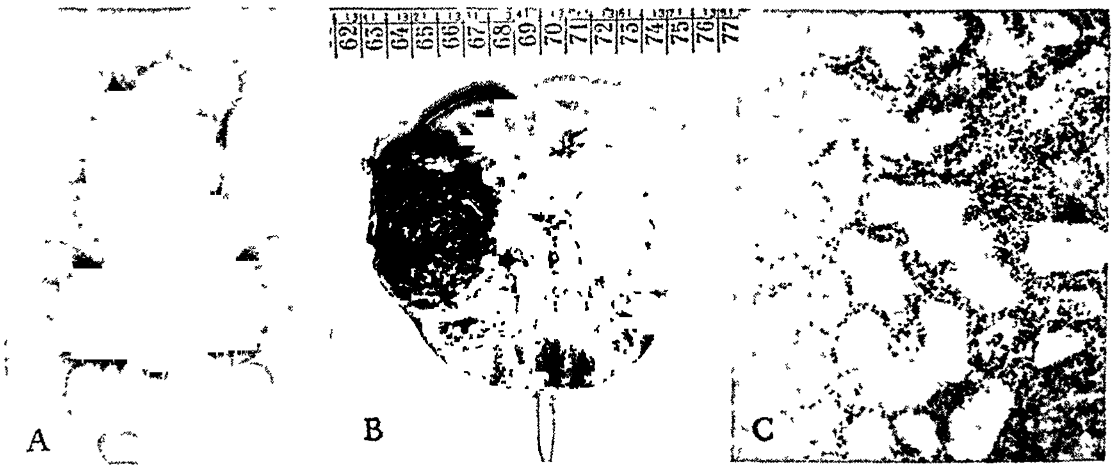

Fig. 4 (*Case 2*).—*A*, bilateral retrograde pylegrams revealing widening of space between upper and middle calyces in right side, suggestive of expanding mass. *B*, open specimen (right kidney), showing round hemorrhagic lesion originally considered a hemorrhagic cyst. *C*, photomicrograph from same kidney, showing change characteristic of infarction.

Roger's Disease Treated by Cardiopericardiomyopexy

Report of Six Cases

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THE first cardiopericardiomyopexy for coronary arterial disease was performed in 1949. In January 1951 cardiopericardiomyopexy was performed for the first time on a patient with rheumatic multivalvular heart disease. In June 1951 cardiopericardiomyopexy was performed for the first time on a patient with Roger's disease (interventricular septal defect).

Six cases of Roger's disease treated by cardiopericardiomyopexy are here presented.

The author reports a follow-up study of 6 patients with Roger's disease on whom cardiopericardiomyopexy was performed between 1951 and 1958. He includes data ranging up to seven years after the operation, gauging the results by the effect of the procedure on tolerance of exercise, severity and frequency of anginal pain, presence or absence of signs of cardiac failure and abil-

grafía sugiere la presencia de una tumoración renal, y en la operación se ve un quiste de aspecto hemorrágico.

Los enfermos que padecen reumatismo cardiaco crean a veces accidentes embólicos, incluso repetidos, en el riñón y otros órganos.

RIASSUNTO E CONCLUSIONI

Vengono descritti due tipi di infarto dell'arteria renale distinti da una diversa etiologia e da differenti quadri clinici, urografici e anatomopatologici. Nel primo caso presentato si trattava di un infarto bilaterale massivo in un paziente anziano *con arteriolite bilaterale diffusa a entrambi* i reni. Il quadro è oaratterizzato da un dolore addominale violento, da un aspetto urografico insolito (disegno calicopielico tenue), dall'assenza di pulsazioni dell'arteria renale, da un aspetto a "paté di fegato" del rene, dall'esito infausto, ed è dovuto all'infarto renale bilaterale massivo conseguente a una lesione diffusa delle arterie renali. Nel secondo caso si trattava di un infarto parziale unilaterale in un paziente relativamente giovane con una storia di endocardite reumatica. Gli aspetti salienti di questa affezione sono rappresentati dal dolore improvviso, dall'emorragia macroscopica successiva, da un quadro urografico di massa renale, dall'osservazione intraoperatoria di una cisti di tipo emorragico. Nelle cardiopatie reumatiche possono aversi emboli renali o in altri organi.

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ber 18. An uneventful recovery followed, and physical exercises were started two weeks later. The patient is now symptom free and is leading a normal, active life. He is doing daily strenuous physical exercises.

CASE 6.—Y. D., a married woman aged 24, was examined on Dec. 31, 1957, because of precordial pain, generalized tiredness and weakness of long duration and difficulty in climbing stairs. There was no history of rheumatic fever.

Physical examination revealed a moderately enlarged heart. An audible systolic murmur covered the precordium, best heard at the left sternal border at the left fourth intercostal space. The electrocardiographic Master's double-step test gave positive results.

Cardiopericardiomyopexy was performed at the Parkchester General Hospital on Jan. 8, 1958, and recovery was uneventful. The patient has been symptom free since the operation. She climbs stairs without difficulty and is doing daily physical exercises. She is leading a normal life.

Cardiopericardiomyopexy is a safe and simple procedure that can be easily performed with local anesthesia. It consists of removal of the left fifth costal cartilage with the perichondrium; double ligation and severance of the internal mammary prising number of years: if it is seriously diseased or fails, death may come quickly, even though all the rest of the cardiovascular system is perfect."

The good results obtained in 6 cases of Roger's disease treated by cardiopericardiomyopexy emphasize the importance of the myocardium in this type of congenital cardiac disease.

ZUSAMMENFASSUNG

Der Verfasser berichtet über die Nachuntersuchung von 6 Kranken von Maladie de Roger, an denen in den Jahren 1951 bis 1958 eine Kardioperikardiomyopexie ausgeführt wurde. Die Beobachtungen erstrecken sich uber einen Zeitraum bis zu 7 Jahren nach der Operation. Als Maßstäbe zur Beurteilung der Erfolge dienen der Einfluss der Operation auf die Fahigkeit körperliche Ubungen auszufuhren, die Schwere und Häufigkeit angionöser Schmerzen, das Bestehen oder das Fehlen von Zeichen der Herzschwache und die Fähigkeit oder Unfahigkeit, zur Arbeit zuruckzukehren oder eine erhöte Arbeitslast zu übernehmen. Alle Kranken, die working continuously. He married two years after the operation.

At the time of writing he is leading a normal and a gainful life and doing daily exercises.

CASE 2.—S. B., a woman aged 31, married and the mother of 3 children, was examined on Feb. 16, 1956. The chief complaints were of many years of dyspnea on slight exertion and of congestive heart failure with each pregnancy at the time of delivery. The patient had had rheumatic fever at the age of 6. Congestive heart failure had occurred with the delivery of each of the 3 children. One pregnancy had been interrupted by dilation and curettement because of the cardiac condition. When examined, she was three and a half months pregnant and wished to prevent heart failure at the time of delivery.

Physical examination revealed no apparent pathologic change except in the heart, which was generally enlarged. A soft systolic murmur was audible over the precordial area, most accentuated at the left border of the sternum in the left fourth intercostal space. The electrocardiographic Master's double-step test revealed coronary insufficiency. Diffuse varicosed and thrombosed veins were observed in both legs. The diagnosis was Roger's disease.

The patient underwent cardiopericardiomyopexy at the Madison Avenue Hospital on March 6. She has been symptom free since the operation, and was delivered of a normal baby at full term, with no complications and no heart failure. At the time of writing she is leading a normal life.

CASE 3.—H. J., a girl aged 5 years, was examined on Nov. 16, 1957, the mother having noticed for some time that the child breathed heavily. The child complained of tiredness, wanted to rest and showed no desire to play. There was no history of rheumatic fever.

Physical examination revealed no apparent pathologic change except for a loud systolic murmur in the precordium, best heard near the left sternal border. The left ventricle was moderately enlarged. Labored breathing was visible. The diagnosis was Roger's disease.

Cardiopericardiomyopexy was performed at the Parkchester General Hospital on November 22. Since the operation the child is very active and breathes normally.

CASE 4.—A. N., an unmarried man aged 31, was examined in June 1957 in Israel because of weakness and fatigue on the slightest exertion, especially walking. He had had rheumatic fever at the age of 15 and had been under continuous medical supervision since then, without improvement.

Physical examination revealed Roger's disease, Cor bovinum (heart enlarged to the right and to the left). There was an apical thrust in the sixth left intercostal space, 2 fingerbreadths outside the midclavicular line. A blowing systolic murmur was heard over the left sternal border, the apex and the aortic and tricuspid areas. The blood pressure in millimeters of mercury was 160 systolic and 0 diastolic. The pulse rate was 84. The patient was livid, and dependent edema was observed. Roentgen study revealed enlarged right and left cardiac chambers and an enlarged aorta.

The diagnosis was Cor bovinum (Roger's disease), with pathologic defects of the mitral, aortic and tricuspid valves.

The patient arrived in New York City on December 5 and entered the Parkchester General Hospital. Cardiopericardiomyopexy was performed on December 18. Recovery was uneventful and daily physical exercises were begun ten days after the operation. The patient returned to Israel one month after the operation. He has remained symptom free. A roentgenogram of the chest taken four weeks after the operation showed 0.5 cm. diminution of the transverse diameter of the heart. He writes that he is leading a normal life.

CASE 5.—L. L., a married man aged 29, was examined on Nov. 18, 1957. The chief complaints were of precordial pain and palpitations on exertion, general weakness and fatigue. The patient had had acute articular rheumatic fever at the age of 10. Since then he had been under medical care, with no improvement and with his activities limited. In 1957 the symptoms had become more pronounced.

Physical examination revealed chronic sinusitis. The heart was enlarged, with a systolic murmur covering the precordial, aortic and mitral areas, most clearly audible over the left sternal border at the left fourth intercostal space. The diagnosis was Roger's disease, with involvement of the mitral and aortic valves.

Cardiopericardiomyopexy was performed at the Parkchester General Hospital on December 18. An uneventful recovery followed, and physical exercises were started two weeks later. The patient is now symptom free and is leading a normal, active life. He is doing daily strenuous physical exercises.

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sencia o ausencia de signos de desfallecimento cardiaco y la capacidad o incapacidad para volver al trabajo o realizar un trabajo mayor.

Todos los enfermos sobreviveron la operación mostraron resultados clínicos excelentes, y fueron capaces de volver a sus actividades físiscas normales sin angina ni disnea. Las pruebas de la tolerancia para el ejercicio mostraron resultados de alta mejoría, incluso en enfermos que habían estado incapacitados totalmente durante largos períodos antes de la operacion.

RÉSUMÉ

L'auteur presente une étude (1951-1958) portant sur 6 cas de maladie de Roger traités par la cardiopericardiomyopexie, comprenant des resultats s'etandant sur une période de 7 ans aprês l'operation, resultats basés sur les critères suivants: tolerance a l'exercise physique, degré et frequence des douleurs angineuses, ou absence de symptomes cardiaques, capacité de travail.

Les resultats cliniques se sont revelés excellents chez tous les malades operés.

SUMARIO

O autor apresenta o resultado pós operatório de 6 pacientes de maladie de Roger nos quais se efetuou "Cardiopericardiomyopexia" incluindo casos com 7 anos de operados, avaliando os efeitos da operação pelo tolerância aos exercicios, freqüência e servidade dos ataques de dôr anginal, a presenca ou ausençia de sinais de descompensação cardíaca e a habilidade ou inhabilidade de retornar ao trabalho, ou aumento de quantidade de travalho. Todos pacientes os sôbreviveram ao ato cirúrgico, mostraram resultados clínicos, reassumindo as atividades físicas normaissem angina ou dyspnea.

Os testes de tolerância aos exercicios ofereceram resultado que atestavam grande melhora mesmo em pacientes que estavam totalmente incapacitados anteriormente à operação.

RIASSUNTO

L'autore riferisce su un controllo a distanza eseguito in 6 malati de maladie de Roger ai qualli aveva praticato una cardiopericardiomyopessia negli anni dal 1951 al 1958.

I resultati sono stati valutati mediante un controllo delle capacità fisiche degli operati, in base alla gravità e frequenza degli attachi anginosi, in base alla presenza o alla mancanza di segni di insufficienza cardiaca e alla capacità dei malati di reprendere o meno il lavoro abituale, o di iniziarne uno più gravoso. Tutti i malati soppravvissero all'intervento, dimostrano excellenti risultati clinici, avendo ripreso le loro normali attivita senza dolori anginosi ne dispnea.

Le prove fisiche mediante esercizi diedero risultati accelenti anche in malati che prima dell'intervento erano stati per un longo periodo inefficienti.

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Genitourinary Surgery

Treatment of Vesical and Prostatic Carcinoma with Atomic Medicine

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A method of isotopic treatment for far advanced vesical and prostatic carcinoma, employing both the injection of radioactive colloidal chromic phosphate and the use of external cobalt bomb therapy, is described. The authors state that this method, properly applied, is well tolerated and seems to produce no serious complications. Radiation reaction in the skin in minimal and radiation sickness virtually absent, despite the fact that a large tumor dose is delivered.

In addition to making it possible

THE purpose of this paper is to outline the indications for the treatment of carcinoma of the urinary bladder and of the prostate with atomic medicine and to indicate the technic which we have developed for such treatment.

We have obtained improved results in the treatment of carcinoma of the bladder and the prostate gland by using a combination of surgical treatment, injection of radioactive colloidal chromic phosphate and external irradiation with a large cobalt bomb. Although this combined treatment achieves only palliative benefit in the more advanced stages of the disease, some of our patients have had an apparent arrest of disease for more than four years.

without open operation, and some of them have done well. This has usually been prescribed when there was some medical contraindication to open operation, such as coronary disease.

For Clinical Stage III (Infiltrating, Penetrating or Requiring Total Cystectomy): When open operation reveals that the neoplasm is infiltrating and extending through the bladder wall into the perivesical fat or into the regional lymph nodes, we remove the bulk of the tumor electrosurgically and fulgurate its base. We also remove a lymph node for biopsy if it appears to be involved by metastatic disease, and inspect the liver for evidence of metastasis. If the liver is not grossly involved, we record the extent of the lymph node metastases and then give the patient intensive postoperative cobalt bomb therapy. We do not use interstitial irradiation for this stage of tumor. If there is local recurrence after cobalt bomb treatment, a "second look" operation is performed and interstitial isotope injection is carried out.

We now prefer to use cobalt bomb therapy for all patients who were previously considered suitable for cystectomy. This includes (1) those with involvement of the trigone, who cannot be treated by interstitial therapy because it would destroy the ureteral orifices; (2) those with infiltration of the outlet of the bladder requiring local destruction of the sphincters; (3) those with multiple infiltrating tumors of the bladder; (4) those with recurrent spreading low-grade malignant tumors involving large areas of the bladder, and (5) those with superficial tumors becoming highly malignant or infiltrating and penetrating.

For Clinical Stage IV (Distant Metastases): Palliative cobalt therapy is employed to reduce hematuria and attempt to cause as much regression of the tumor as is possible for palliation and prolongation of life. Smaller total doses of cobalt radiation therapy are prescribed for these patients, since only palliation is possible.

Supportive Treatment. — The general condition of the patient must be studied and appropriate supportive measures prescribed to control hematuria and replace loss of blood by transfusions. If infection is present in the bladder or the upper part of the urinary tract, antibiotics are administered. If there is a nonfunctioning infected kidney it should be removed surgically when the infection cannot be controlled by medical means. If the function of the upper part of the urinary tract is poor and if the edema associated with radiation therapy threatens to obstruct proper drainage of the kidneys, it may be necessary to perform a nephrostomy or transplant the ureters to the skin.

Radiation Therapy.—1. *Internal Radiation:* After the bladder has been opened and the need for interstitial irradiation is apparent, we now usually employ radioactive colloidal chromic phosphate by the multiple long needle technic, as we have previously described for the palliative treatment of advanced prostatic carcinoma. We have substituted this isotope injection treatment for radon seeds, which we previously used for the same purpose. The isotope, which is prepared from radioactive phosphorus (P^{32}), has a physical half-life of fourteen and three-tenths days and is composed entirely of beta radiation, which has a maximum penetration of 8 mm. of tissue. It delivers a total dose of 885,000 roentgen equivalents physical to 1 Gm. or 1 cc. of tissue containing 1 millicurie of the isotope completely disintegrating. In our opinion this isotope will probably prevent some of the complications that followed the use of radon seed implantation, since the more penetrating gamma radiation present in the radon seeds has been eliminated. When radon seeds are used we prefer the gold seeds, which contain about 1 to 1.5 millicuries of radon per seed. These are implanted in a radial manner, about 1 cm. apart.

When we use long needles for injection of the isotope, they are placed about 0.5 cm. apart and each needle is injected with 3 millicuries of the isotope. The chromic phosphate preparation contains 2 millicuries of P^{32} per cubic centimeter of fluid. The therapist is given adequate protection by the plastic shield over the special syringe used, which contains a disposable cartridge.

2. *External Irradiation:* We have noted that cobalt-60 therapy has certain advantages over conventional roentgen therapy as delivered by 200 to 250 kilovolt machines. Cobalt-60 has a higher energy, equivalent to about 3,000,000 volt roentgen rays. This higher energy permits better protection of the skin, and at the same time we are able to deliver a much higher tumor dose. The depth dose pattern in the tumor area is superior. There is less bone damage, because there is not as much backscatter.

TABLE 1.—*Cobalt Teletherapy of the Bladder: Preliminary Results in 36 Cases*

	No. of Patients	*Stage* 1	2	3	4	*Living*	*Dead*
Good	16	5	6	4	(1)	15	1
Fair	5	—	—	3	(2)	3	2
Poor	9	—	1	4	4	3	6
Incomplete treatment	3	—	—	3	—	—	3
Too early for eval.	3	1	2	—	—	3	—
	36	6	9	14	7	24	12

TABLE 2.—*Cobalt Teletherapy of the Bladder: Preliminary Results in 36 Cases*

	No.	*Trans.*	*Adeno.*	[illegible]	[illegible]
Good	16	10	1	[illegible]	1
Fair	5	4	1	—	—
Poor	9	5	—	3	1
Incomplete treatment	3	3	—	—	—
Too early for eval.	3	2	—	1	—
	36	24	2	[illegible]	2

obtaining the actual dosage value, both in the tumor volume and outside the tumor volume in any plane. It takes into consideration minor variations in body structure, such as air cavities. The plastic phantom is made for each patient, and this is filled with a special bolus material that simulates body tissue in specific density. A radiation-recording instrument is placed at the simulated tumor site in the phantom; an actual treatment is given, and the "tumor dose" is recorded. When the radiation dosimeter is moved to various areas about the tumor site, an actual isodose pattern is determined. When there is extension of the disease to the lymph nodes, the volume of tissue to be irradiated is accordingly mapped out. When no extension through the bladder and no lymph node involvement is present, a much smaller tumor volume is irradiated.

Our patients are usually treated in the vertical position, on a specially constructed rotating chair. The cutaneous reaction that follows a tumor dose of 5,000 to 6,000 roentgens given in six to eight weeks is only a faint erythema, as compared to the severe telangiectasia and cutaneous atrophy that would result if half of this tumor dose were delivered by conventional roentgen therapy. We check the location of the beam by taking roentgenograms of the bladder after the instillation of radiopaque material. A specially constructed diagnostic roentgen machine is attached to the cobalt machine so that these roentgenograms can be made to provide an accurate check of the size and direction of the beam.

We have found that the 270-degree anterior rotation pattern delivers a homogeneous beam of radiation to the region of the bladder, with a minimal amount reaching the rectum. This produces much less rectal reaction than is produced by following a 360-degree rotation pattern. The 180-degree anterior pattern is suitable when there is greater extension of the disease outside of the bladder area. This pattern may also be combined with the 270-degree rotation pattern. The stationary technic is employed chiefly when there is metastasis to the inguinal lymph nodes. The early and late cutaneous reaction is considerably less intense after rotation cobalt therapy than after stationary cobalt therapy. This is because the skin dose is distributed over the entire rotation segment instead of being concentrated through the single stationary portal. The skin dose with stationary cobalt therapy nevertheless is still only about one-third of that delivered to the skin by conventional roentgen treatment. Larger tumor doses, therefore, may be delivered with the cobalt machines to the target area than is possible with the 250 kilovolt roentgen machine, without producing proportionally greater cutaneous reactions.

Results.—Thirty-six patients with carcinoma of the bladder have been treated and followed for almost three years. Twenty-four had transitional cell carcinoma, and of these 10 obtained a good result, 4 a fair result and 5 a poor result. Three of these had incomplete treatment, and 2 have been treated relatively recently. There were 2 patients with adenocarcinoma of the bladder; 1 of these obtained a good result and 1 only a fair result. There were 8 patients with an epidermoid type of vesical tumor; 4 of these obtained good results, 3 obtained poor results, and 1 was treated relatively recently. Of the 2 patients with an undifferentiated type of tumor, 1 obtained a good result and 1 a poor result.

Of the total 36 patients, 6 were in our Clinical Stage I. In 5 of these the results were good; 1 has been treated relatively recently. This, of course, indicates that patients in Clinical Stage I have an excellent prognosis, because the tumor does not involve the bladder wall. Of the 9 patients in Clinical Stage II, 6 had good results; 1 a poor result, and 2 were treated recently. This would indicate that patients in Clinical Stage II also have a relatively good prognosis. The 14 patients with more advanced disease (Clinical Stage III) were the ones we were particularly interested in, because these have usually had the worst prognosis, in view of the fact that they have infiltrating tumors with penetration of the bladder wall and some with regional lymph node metastases. Four of these showed good results, 3 fair results and 4 poor results; 3 were too ill to complete their treatment. It appears, therefore, that about one-third of these patients might be salvaged with cobalt therapy. There were 7 patients in Clinical Stage IV who were treated primarily at the beginning of our series in order to determine what effect cobalt radiation would have, since we knew that these patients would have come to autopsy. The autopsies revealed that 1 had a good

Complications.—No serious complications were noted during treatment or after treatment. The patients who do not have extensive infiltration and penetration of the bladder wall show relatively little bladder contraction after treatment as compared to the bladder contraction which we often observed after conventional roentgen therapy. The rectal complaints, which are at their peak at the conclusion of the series of treatments, usually last for about two to three weeks. The cutaneous reactions at their peak are only a mild erythema and, later, mild tanning. The skin remains soft and pliable, and in only 1 case did we observe postradiation fat necrosis. In this patient all the treatment was delivered through a single anterior portal, so that the subcutaneous fat received the largest part of the dose. When patients had previously been treated with radon seeds or radium needles and then referred to us several years later for recurrent disease, we noted a radiation necrosis would often develop at the site injections of chromic phosphate at three-month to four-month intervals, if disease was present on post-treatment biopsy we have elected to treat a group of these patients secondarily with cobalt bomb rotation therapy. When single port posterior technic were first used, we noted that a serious and severe cutaneous reaction developed over the sacrum, because the folds of the buttocks caused the skin over the sacrum to be at a lower level than the skin of the buttocks. Actually, the skin over the sacrum was now in a "tumor position" rather than a skin position, since the intensity of the beam below the highest point was 100 per cent, as compared with 35 per cent on the surface of the skin.

When the single beam was directed from the anterior part of the body, the tumor dose to the prostate was about 50 per cent and the rectal dose only 40 per cent, as compared to the rectal dose of 60 per cent and tumor dose in the prostate of 40 per cent when the beam was directed from the posterior aspect. It is therefore apparent that the anterior beam of the single portal is more efficient than the posteriorly directed single beam. Because of the large dose to the rectum, we had to limit the use of the single portal technic.

With 180 degrees of anterior rotation, the prostate received 100 per cent of the dose and the rectum received 80 to 90 per cent. With 360 degrees of rotation, both the prostate and rectum again were in the 90 to 100 per cent range. With anterior rotation of 270 degrees, the prostate received 100 per cent of the dose, while the rectum received 40 to 60 per cent. It is apparent that there is no way to eliminate completely the radiation reaction in the vesical and rectal areas. At the time of the original surgical exploration and isotope injection the presence or absence of metastatic lymph nodes is determined, and if present they must be included in the field of radiation of the cobalt beam. The type of rotation pattern is selected for each patient, depending on the local extent of disease.

Results.—Of the 15 patients who were given cobalt bomb therapy for advanced prostatic carcinoma, 14 had a combination of the isotope injection with subsequent cobalt bomb therapy, while 2 patients were given only cobalt bomb therapy. Of the 15 patients treated, 8 showed good results; 7 of these are living, and 1 is dead. Four patients had poor results after this treatment; of these, 1 is living and 3 are dead. It appears, therefore, that at least two-thirds of the patients thus far have had worth while results.

Complications.—There have been no serious complications since we adjusted the technic to prevent the severe skin reactions noted when the patients were given all of the treatment through a single posterior port technic. The rectal edema and radiation reaction apparent toward completion of the total course of treatment, when the patient has received a tumor dose of about 5,000 to 6,000 roentgens in six to eight weeks, lasts for about two to three weeks and then subsides. During the height of the reaction the patient complains of diarrhea, but this is controlled by suitable medication and is of short duration. We have not observed any serious depression of the bone marrow with this type of irradiation. When there is evidence of such depression it usually indicates that the patient has osseous metastases, even though roentgen examination of the bones may reveal no abnormality. A sternal puncture or bone marrow study of the iliac crest may reveal bone metastases before there is roentgen evidence that bone is involved in the disease.

ZUSAMMENFASSUNG

Zur Behandlung vorgeschrittener Karzinome der Harnblase und der Prostata

wird ein Verfahren mit Isotopen vorgeschlagen, das sich sowohl der Einspritzung radioaktiven kolloidalen Chromphosphats als auch externer Bestrahlung mit der Kobaltbombe bedient.

Bei richtiger Anwendung wird dieses kombinierte Verfahren vom Patienten gut vertragen und führt offenbar zu keinen ernsthaften Komplikationen.

Die Bestrahlungsreaktion der Haut ist sehr geringfügig, und trotz der hohen verabfolgten Tumordose kommt es fast zu keinem Bestrahlungskater.

Durch die kombinierte Behandlung mit dem Isotop und der Kobaltbombe ist es jetzt möglich, hohe Tumordosen zu verabreichen und die Behandlung genau auf das erkankte Gewebe zu lenken mit nur ganz geringer Schädigung des normalen Gewebes in der Umgebung der Erkrankung. Dies war mit der üblichen Behandlung mit Therapiemaschienen von 200 bis 250 Kilovolt nicht möglich.

et l'on constate une absence relative de maladie des rayons malgré des doses tumorales très élevées.

Il est en effet possible maintenant d'appliquer des doses tumorales élevées par le traitement combiné d'isotopes et de la bombe au cobalt, et il est aussi possible de diriger ce traitement de façon précise vers les tissus incriminés avec des dommages minimes aux tissus environnants. Cela était impossible avec les appareils conventionnels de 200 à 250 kilovolts.

Les résultats immédiats sont suffisamment encourageants pour inciter les auteurs à poursuivre cette façon de procéder.

Il a une absence remarquable de contractures secondaires de la vessie après traitement à la bombe au cobalt, comparativement à ce que l'on observe généralement après roentgenthérapie classique intensive.

RIASSUNTO

cale che seguiva fatalmente la roentgenterapia convenzionale.

RESUMEN

Se presenta un método para el tratamiento del cáncer avanzado de vejiga y próstata, en el que se emplean simultaneamente la inyección de fosfato crómico radiactivo en suspensión coloidal y la terapia con bomba de cobalto.

Este tratamiento mixto es bien tolerado por el paciente y no produce complicaciones serias si se aplica de una forma adecuada.

La reacción de la piel a la radiación es *muy pequeña, y las secuelas orgánicas* generales también, a pesar de que la dosis del tumor sea muy elevada.

Con el empleo simultáneo de los isótopos y la cobaltoterapia se alcanzan dosis tumor muy altas, y se puede aplicar esta dosis a los tejidos neoformados, sin que casi se afecten las zonas de alrededor. Esto era imposible de lograr con los clásicos aparatos de radioterapia de 200 a 250 kilovoltios.

Los resultados inmediatos son esperanzadores y lo suficientemente convincentes como para continual con esta técnica.

Es sorprendente que después de la cobaltoterapia no aparece la típica contractura secundaria de la vejiga que se ve tan amenudo tras la radioterapia clásica.

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Neurologic Surgery

Complicated Cerebral Palsy: Surgical Pathologic Aspects[*]

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BRONX, NEW YORK

Fifty-one children with complicated cerebral palsy underwent craniotomy. Cerebral venous angioma of the sylvian fissure was observed unilaterally in 49. The remaining 2 patients showed, respectively, a subarachnoid cyst compressing the fourth ventricle and premature closure of the fontanels.

Five cases of complicated cerebral palsy are reported in detail. The ages

THE purpose of this paper is to describe the postmortem and surgical pathologic picture observed in patients with complicated cerebral palsy, which may be defined as cerebral palsy associated with epilepsy, mental deficiency or both. The brains of 51 children with cerebral palsy thus complicated were studied at craniotomy; of the 51, 5 came to autopsy, and the brains of these were examined postmortem, both grossly and microscopically. The cases of these 5 will be reported in some detail.

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RESUMEN

Se presenta un método para el tratamiento del cáncer avanzado de vejiga y próstata, en el que se emplean simultaneamente la inyección de fosfato crómico radiactivo en suspensión coloidal y la terapia con bomba de cobalto.

Este tratamiento mixto es bien tolerado por el paciente y no produce complicaciones serias si se aplica de una forma adecuada.

La reacción de la piel a la radiación es muy pequeña, y las secuelas orgánicas generales también, a pesar de que la dosis del tumor sea muy elevada.

Con el empleo simultáneo de los isótopos y la cobaltoterapia se alcanzan dosis tumor muy altas, y se puede aplicar esta dosis a los tejidos neoformados, sin que casi se afecten las zonas de alrrededor. Esto era imposible de lograr con los clásicos aparatos de radioterapia de 200 a 250 kilovoltios.

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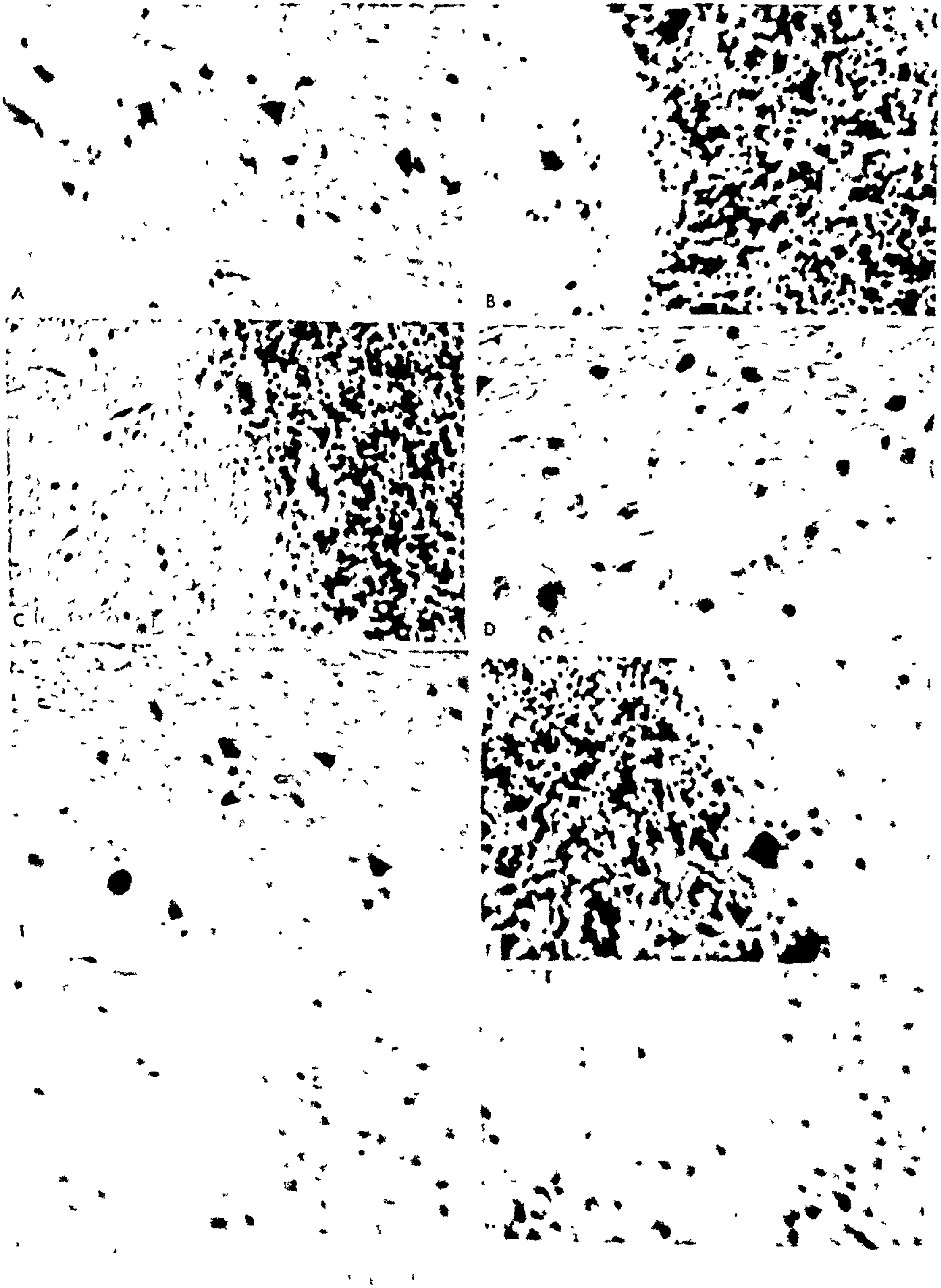
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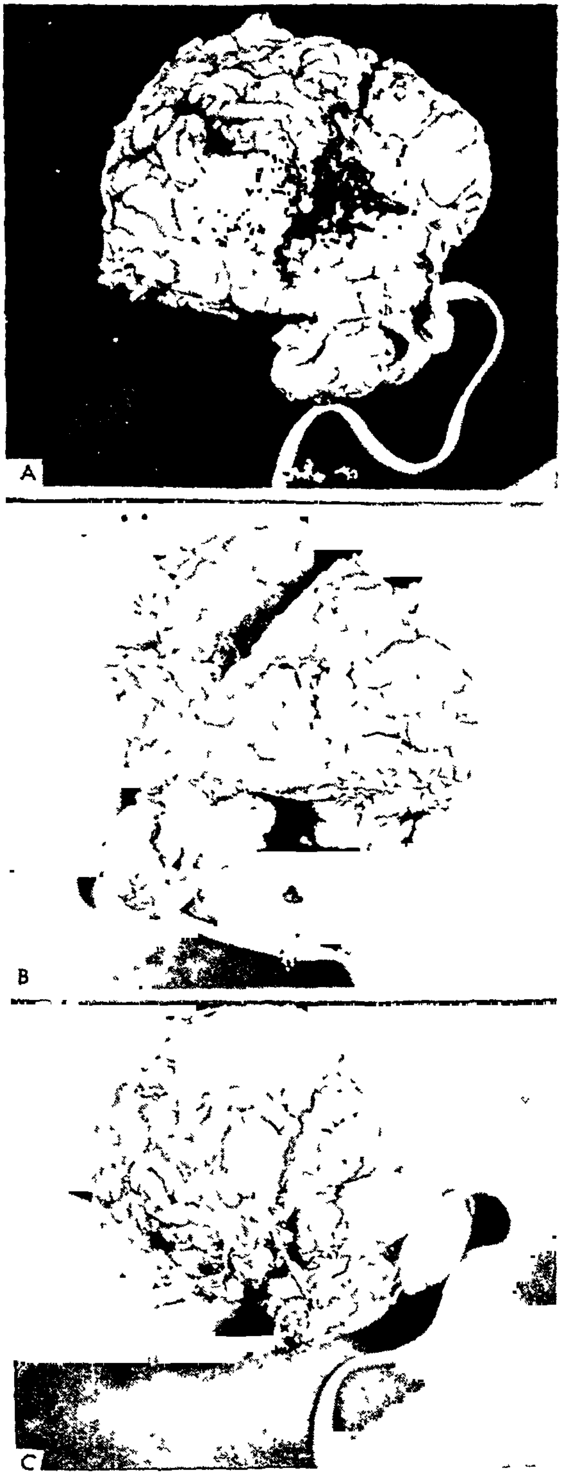


Fig. 1 *(Case 1).*—*A*, massive angioma (see text). *B*, opposite side of brain, devoid of angioma. *C*, photograph showing deep connections of angioma.

tions.) The other side usually showed congestion of the brain and some arachnoiditis.

The patients in the following 5 cases came to postmortem examination.

REPORT OF CASES

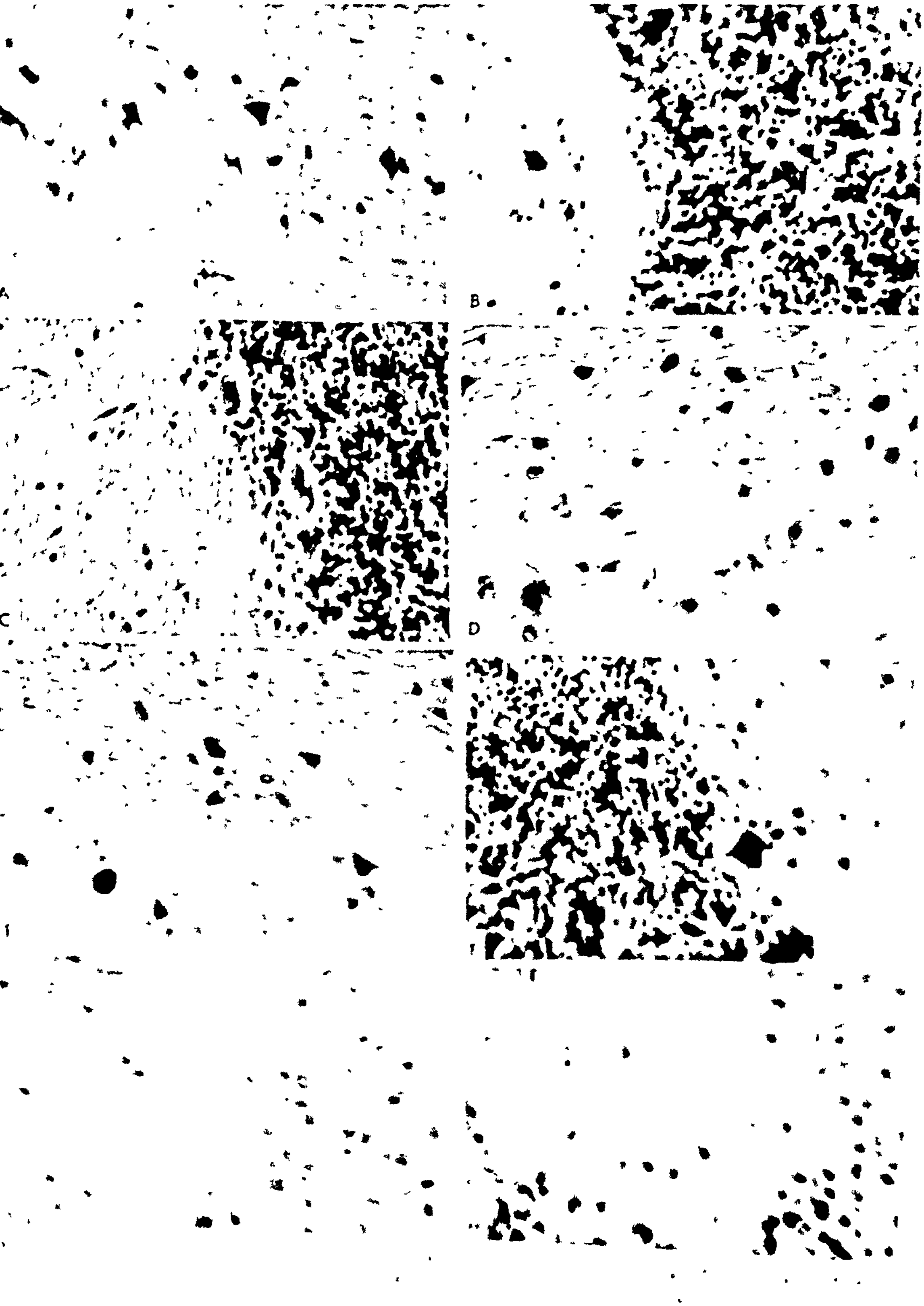
CASE 1.—P. J. S., *a boy aged 2½ years*, had had attacks of laryngeal spasm and choking since he was 9 months old. He was rigid in all four limbs. He could not hold his head up or sit up without support. He was aphasic, epileptic, *quadriplegic and mentally retarded.* Suboccipital craniotomy revealed a large subarachnoid cyst compressing the fourth ventricle and the cerebellum.

The child did well after operation; he was more alert and could swallow better. The rigidity was markedly diminished. A respiratory infection developed on the third postoperative day and an allergic rash on the day after penicillin therapy was instituted. He died on the sixth postoperative day. Postmortem examination revealed the cause of death to be bronchopneumonia.

Brain.—Grossly there was no abnormality except in the cerebellar region. There were changes due to compression of the cerebellum by the cyst.

Microscopic examination revealed the frontal, parietal and occipital lobes to be within normal limits. The cerebellar tissue was abnormal in that the cellular content, especially in the granular layers, showed cell degeneration and chronic inflammatory changes (Fig. 1, *A*, *B* and *C*).

CASE 2.—A. G. T., a boy aged 9½ months, had been born prematurely in a breech delivery (?) by forceps. He "collapsed" the same night and was transferred to another hospital, where a diagnosis of intracranial hemorrhage and pneumonia was made. At 9½ months the baby could not sit up. The skull was slightly smaller than normal. The fontanels were closed. There was paralysis of the left arm. Right craniotomy, performed on Oct. 27, 1953, revealed massive angiomatous vessels in and about the sylvian fissure. These were cauterized. The skull was full of venous sinuses. On October 28 reoperation was performed for bleeding from the bed of the cauterized angioma. The baby died about four days after the operation, the anatomic cause being cerebral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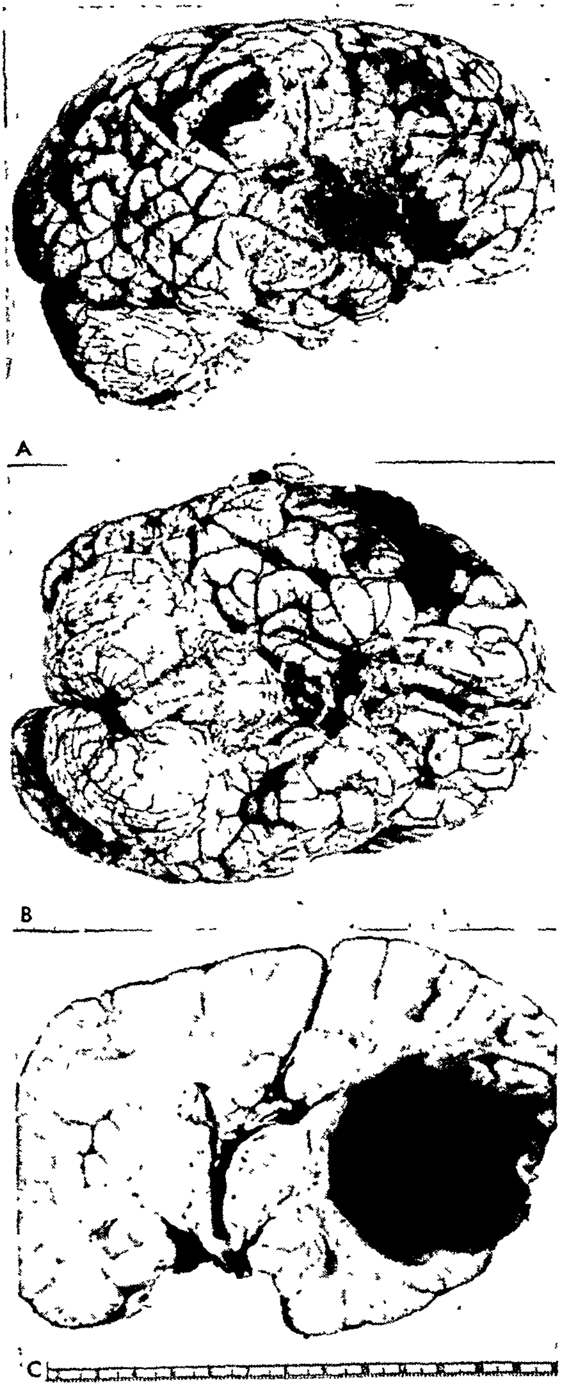

Fig. 3.—*A*, secondary hemorrhage in region of removal of angioma. *B* and *C*, site of secondary hemorrhage.

edema. The cortex and ventricles were grossly normal (Fig. 2, *A* and *B*).

CASE 3.—R. V., a boy aged 3 years, had a history of umbilical hernia, which had healed spontaneously; a right inguinal hernia, which became strangulated when he was 6 months old; pneumonia at the age of 1 year; severe dehydration at the same age, and an infection of the upper part of the respiratory tract, with hyperthermia, at the age of 2 years. His birth was premature and his birth weight 4 pounds and 5 ounces (1,956 Gm.). He was jaundiced for a short time and vomited excessively. All four limbs were spastic, the condition being most pronounced in the left arm. He could not swallow solid foods, could not sit up and was aphasic and mentally defective, but he could recognize his parents and watch television programs.

Right craniotomy revealed cerebral venous angioma of the region of the left sylvian fissure, and this was removed by electrocautery.

Postmortem Observations. — Autopsy revealed (a) cerebral edema; (b) intussusception of the small bowel, and (c) pneumonia. The brain was grossly normal. Microscopic examination showed the frontal, parietal, occipital and cerebellar tissue to be within normal limits (Fig. 2, *C* and *D*).

CASE 4.—M. L., a girl aged 2 years and 9 months, had been unable to take the breast at birth. Projectile vomiting occurred shortly after birth. The child still vomits. She was able to drag herself across the floor but showed quadriparesis, more marked on the right than on the left. The electroencephalogram was normal. A diagnosis of cerebral palsy with mental retardation had been made at another center. This was in agreement with my opinion, except that the child also had definite petit mal.

Left Craniotomy.—Exploration revealed a venous angioma in the region of the sylvian fissure, which was removed by electrocautery. Pneumonia developed at home, and the child was returned to the hospital, where she died the next day, seventeen days after the operation. Postmortem examination revealed the cause of death to be bronchopneumonia. Gross and microscopic examination of the brain showed no abnormalities (Fig. 2, *E* and *F*).

CASE 5.—F. A. L., a white boy aged 7½ years, had been born in forced labor because he was thought to be "past due." The umbilical cord was pinched at the pelvic brim, and version was done. The baby was in an oxygen tent for one week and was fed by tube. At the age of 7½ the child drooled saliva, showed stertorous breathing, could not sit up, was aphasic and mentally deficient and was spastic in all four limbs, with some athetosis. He used the right hand better than the left. The clinical impression was that of cerebral palsy in all four limbs, with athetosis, epilepsy and a mental defect.

Right Craniotomy.—This procedure revealed an arteriovenous angioma in the region of the sylvian fissure. It was removed by electrocautery.

Postoperative Course.—The child died at home twelve days after the operation.

Postmortem Examination. — Autopsy revealed the cause of death as secondary cerebral hemorrhage into the operative site. The hemorrhagic area was 4.5 cm. in its largest diameter (Fig. 2, *G* and *H*).

Microscopic Investigation.—This was carried out at an institution in another state, and the slides were not available at the writing of this report. Most of the reported observations were typical of those noted in the brain after surgical intervention followed by secondary hemorrhage.

COMMENT

In 5 cases of cerebral palsy complicated by epilepsy or mental deficiency, or both, the patients came to autopsy. Operation on these patients revealed a unilateral cerebral venous angioma to be present in the region of the sylvian fissure in 4 out of the 5 cases. Subsequent investigations have shown that these observations were consistent in the cases of complicated cerebral palsy. Of 51 patients who underwent craniotomy, each of 49 children had a unilateral angioma in the region of the sylvian fissure. One child showed a subarachnoid cyst of the posterior fossa, blocking the fourth ventricle and compressing the cerebellum, [illegible]

[illegible]

region of the postoperative site. In 1 case the brain showed compression changes in the cerebellar tissue; this was the case in which there was a cyst of the posterior fossa. In 4 cases all brain tissue was within normal limits on microscopic examination. Specimens were examined from the frontal, parietal, occipital and cerebellar regions on the side where pathologic change had been observed at surgical exploration.

There was no evidence, either gross or microscopic, of porencephaly in these brains, nor was any other marked abnormality detected grossly or microscopically (Fig. 3).

These findings show that the pathologic condition revealed at operation, venous angioma in the region of the sylvian fissure, tends to cause changes in the telencephalon that may be to some extent reversible, and that removal of this pathologic tissue at operation will give the child a chance for recovery. This indeed proved to be the case with all the surviving patients.

Forty-six children survived the operation, and all improved. Some improved slowly and only in small things, such as heightened muscle control and muscle power and diminished spasticity. All who had difficulty in swallowing and breathing overcame these difficulties. All who had amblyopia showed some improvement. Spasticity was always diminished, and so was athetosis. Epilepsy never recurred in the majority of children and was definitely diminished in others [illegible]

[illegible]

walk who could not sit up by themselves before operation. About thirty months have passed since the first child was operated upon. Within this short period of time all have shown some progress, and some have shown remarkable progress; 1 or 2 are at their normal grade level at school.

It can be concluded, therefore, that complicated cerebral palsy is a definite entity. Each patient offers an individual problem, and the extent or recovery cannot be forecast, since gross and microscopic investigations do not show evidence of detectable pathologic change except for the sylvian angioma. Recovery, in part or in great part, is possible, and a positive attitude should be adopted with these children.

The angioma seems to be formed as a result of neonatal bleeding into the subpial, subarachnoid and subdural layers.

Schwartz[2] has demonstrated conclusively the incidence of neonatal bleeding as the cause of cerebral palsy. Evidence of dense dural, arachnoid or pial adhesions and scar formation is commonly detected in the region of the angioma. The functional deficiency in the brain, to my mind, is caused by hypoxia, which is overcome when the adhesions and angioma are removed. This leads one to the premise set forth by William Sharpe,[3] that good obstetrics and spinal puncture in "suspicious cases" at birth or shortly thereafter are the best prophylactic for measures against cerebral palsy. Any newborn child that shows signs of cyanosis, stupor, muscle twitching, inability to suck, rigidity of the neck, bulging fontanels or excessive crying should undergo spinal puncture. If blood is present in the cerebrospinal fluid, the puncture should be repeated every twelve hours until the fluid is clear.

The pathologic picture and the surgical observations and results lead to the conclusion that active prophylaxis and surgical treatment would decidedly lower the incidence of cerebral palsy and the incapacities associated with it.

In order to demonstrate the angioma, it is advisable to open the skull and dura mater at the lowest angle of the sylvian fissure. Postmortem changes may make the angioma less obvious; it is best, therefore, to freeze the head and its contents immediately after death.

Author's Note: The photographs and pathologic report of Case 5 are included through the courtesy of the Oakwood Hospital Pathology Department. The microscopic sections were prepared by the Neuropathology Department, Bellevue Hospital, Dr. Feigen, Director.

ZUSAMMENFASSUNG

An 51 Patienten mit komplizierter Gehirnlähmung wurde eine Eröffnung des Schädels vorgenommen. In 49 Fällen wurde ein einseitiges venöses Angiom des Gehirns in der Gegend der Fissura Sylvii beobachtet. Von den beiden übrigen Patienten zeigte einer eine den vierten Ventrikel zusammendrückende subarachnoidale Zyste und der andere einen vorzeitigen Verschluss der Fontanellen.

Über fünf Fälle von durch Epilepsie oder Geistesstörungen oder beides komplizierter zentraler Lähmung wird ausführlich berichtet. Das Alter der Kranken schwankte zwischen 9½ Monaten bis zu 7½ Jahren. In allen Fällen fand eine Obduktion statt, und in vier von diesen kam das oben erwähnte einseitige Hirnangiom in der Nähe der Fissura Sylvii zur Beobachtung. Anschliessende Untersuchungen ergaben, dass diese Beobachtungen sich mit den Befunden an den 51 mit Eröffnung des Schädels behandelten Kranken in Einklang bringen liessen. Probestücke aus der Gegend des Frontallappens, des Parietallappens, des Hinterhauptlappens und des Kleinhirns der befallen Seite wurden untersucht. Es bestanden keine Anzeichen von Höhlen-

bildung im Gehirn. Der Verfasser glaubt, dass diese Beobachtungen darauf hinweisen, dass das venöse Angiom in der Gegend der Fissura Sylvii dazu neigt, Hirnveränderungen hervorzurufen, die bis zu einem gewissen Grade reversibel sind; infolgedessen sollte dem Kind die Möglichkeit einer Wiederherstellung durch operative Entfernung des krankhaften Gewebes geboten werden. Bei allen Kindern, die die Operation überlebten, liess sich eine Besserung in verschiedener Hinsicht feststellen.

RÉSUMÉ

Présentation de 51 cas de craniotomie pour paralysie cérébrale avec complications: angiome cérébral veineux unilatéral au niveau de la scissure de Sylvius dans 49 cas; les deux cas restants présentaient respectivement a) un kyste subarachnoïdien comprimant le IVe ventricule; b) une fermeture prématurée des fontanelles.

tion devrait donner à l'enfant une chance de guérison. Une certaine amélioration a été notée chez tous les enfants survivants.

RIASSUNTO

Vennero sottoposti alla craniotomia 51 pazienti con paralisi cerebrale complicata: in 49 di essi si trovò un angioma venosa nella regione della fessura silviana, mentre negli altri 2 si trovarono, rispettivamente, una cisti subaracnoidea comprimente il quarto ventricolo e una chiusura precoce delle fontanelle.

Rengono riferiti dettagliatamente 5 casi, in cui la paralisi cerebrale era complicata da epilessia o da disturbi mentali; la loro età variava da 9 mesi a 5 anni e mezzo. Tutti furono esaminati autopticamente e in 4 di essi si trovò l'angioma unilaterale descritto sopra. Successive indagini dimostrarono che queste osservazioni corrispondevano a quelle dei 51 pazienti trattati con la craniotomia. I pezzi anatomici furono esaminati da ogni punto

de parálisis cerebral complicada con epilepsia o defectos mentales. La edad de los enfermos observados estaba comprendida entre 9 meses y medio y 7 años y medio. Todos estos casos fueron estudiados post-mortem y en cuatro de ellos se encontró el citado angioma en la vecindad de la cisura de Silvio. Investigaciones subsiguientes han demostrado la íntima correlación entre estos casos y los 51 tratados por craneotomía. Las piezas anatómicas del lado afecto han sido estudiadas en cada una de las regiones frontal, parieta, occipital y cerebrosa. Todas estas observaciones llevan al autor a la conclusión de que los citados angiomas son causa de degeneraciones cerebrales que por ser reversibles hacen que se pueda se perar un buen resultado de la extirpación del tejido patológico. En todos los niños operados que han sobrevivido se ha observado una mejoría.

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What then is the difference in intention between the man who discovered the mode of life suitable for the sick, who is called a physician and admitted to be a scientist, and him who, from the beginning, discovered the way to prepare the food we eat now instead of the former wild and animal-like diet? I can see no difference; the discovery is one and the same thing. The one sought to do away with those articles of diet which, on account of their savage and undiluted nature the human frame could not digest, and on which it could not remain healthy; the other discovered what a sick man could not digest in view of his particular malady. What difference is there save in the appearance, and that the one is more complicated and needs more study? Indeed, one is the forerunner of the other.

—*Hippocrates*

Laminectomy in Patients with Injuries of the Spinal Cord

LONG BEACH, CALIFORNIA

A WIDE difference of opinion exists concerning the indications for laminectomy in patients with recent closed traumatic lesions of the spinal cord. Some surgeons maintain that all acute injuries of the cord require laminectomy; others, that there are relatively few indications.

After reviewing the results in the cases of 579 laminectomized and 279 nonlaminectomized patients in a previous study, I concluded that the presence or absence of a spinal manometric block is a basic criterion upon which to operate.[1]

The purpose of this paper is to compare the results of my first study to those obtained with an additional 89 recently discharged patients.

Comparison of Results.—The degree of improvement, as presented in the tables, is as follows: as long as functional sensory or motor return was observed in two segments or more, it was recorded as improvement.

The first study showed that 92 (16 per cent) of 579 laminectomized patients and 80 (29 per cent) of 279 nonlaminectomized patients showed some improvement. The second study showed that 16 (25 per cent) of 61 laminectomized and 15 (60 per cent) of 25 nonlaminectomized patients showed some improvement. Therefore, a grand total of 108 (17 per cent)

TABLE 1.—*Improvement with and without Laminectomy: Time Element*

	Total No. of Patients	No. of Improved	Per Cent Improved
First Study			
With laminectomy			
1-12 hr.	97	15	16
12-24 hr.	86	12	14
24-48 hr.	36	10	28
48-72 hr.	22	6	27
3 days-1 wk.	63	9	14
1 wk.-1 mo.	125	25	20
1 mo.-3 mo.	70	6	9
3 mo.-6 mo.	37	5	14
6 mo.-1 yr.	26	3	12
Over 1 yr.	17	1	6
Total	579	92	16
Without laminectomy	279	80	29
Total	858		
Second Study			
With laminectomy			
1-12 hr.	14	4	29
12-24 hr.	15	2	13
24-48 hr.	7	4	57
48-72 hr.	6	3	50
3 days-1 wk.	3	1	33
1 wk.-1 mo.	7	0	0
1 mo.3- mo.	5	2	40
3 mo.-6 mo.	4	0	0
6 mo.-1 yr.	3	0	0
Over 1 yr.	0	0	0
Total	64	16	25
Without laminectomy	25	15	60
Total	89		
Combined Study			
With laminectomy			
1-12 hr.	111	19	17
12-24 hr.	101	14	14
24-48 hr.	43	14	33
48-72 hr.	28	9	32
3 days-1 wk.	66	10	15
1 wk.-1 mo.	132	25	19
1 mo.-3 mo.	75	8	11
3 mo.-6 mo.	41	5	12
6 mo.-1 yr.	29	3	10
Over 1 yr.	17	1	6
Total	643	108	17
Without laminectomy	304	95	31
Total	947		

were discharged walking without aids of any kind. The second study showed that none of the laminectomized and 8 per cent of the nonlaminectomized patients were discharged walking without aids of any kind. The combined study showed that 1 per cent of the laminectomized and 6 per cent of the nonlaminectomized patients were discharged walking without aids of any kind (Table 4).

Table 5 shows that 9 patients out of 89 are ambulatory with prosthetic aids. Four of the 9 had been laminectomized and could walk for short distances with prosthetic appliances, but for practical purposes wheelchairs were required. The remaining 5 patients had not been laminectomized; 2 could walk without aids of any kind, 1 could walk with 2 Canadian crutches and two short leg braces, and 2 could walk short distances (one with two canes, the other with a walker). For practical purposes, however, the 2 last mentioned required wheelchairs.

COMMENT

The results of the second, although smaller, study confirm those of the first study.

It is my opinion that the absence of block, in general, indicates that the neural structures are not being continuously seriously compressed, that maximum destruction has already occurred and that nothing is to be gained by laminectomy. The presence of a block, however, remains an indication for decompressive intervention, because it offers the patient some chance of improvement.

In both studies, patients with complete blocks and without laminectomy did not improve; only a relatively few of those with complete block, however, as a result of laminectomy; in other words, a number of patients with block have been laminectomized needlessly. This shows that no reliable method is available as yet for de-

TABLE 2.—*Improvement with and without Laminectomy: Vertebral Level*

	With Laminectomy			Without Laminectomy		
	No. of Patients	*No. Improved*	*Per Cent Improved*	*No. of Patients*	*No. Improved*	*Per Cent Improved*
			First Study			
Cervical	61	12	20	115	36	31
T 1-6	115	10	9	32	3	9
T 7-12	285	32	11	84	16	19
Lumbar	118	38	32	48	25	52
Total	*579*	*92*	*16*	*279*	*80*	*29*
			Second Study			
Cervical	24	10	42	17	13	76
T 1-6	7	1	14	1	0	0
T 7-12	21	2	6	4	1	25
Lumbar	12	3	25	3	1	33
Total	64	16	25	25	15	60
			Combined Study			
Cervical	85	22	26	132	49	37
T 1-6	122	11	9	33	3	9
T 7-12	306	34	11	88	17	19
Lumbar	130	41	31	51	26	50
Total	643	108	17	304	95	31

termining which patients with manometric block should not be laminectomized. The roentgen appearance of the vertebrae does not supply such a method. I have seen patients with excellent alignment and without neurologic improvement and others with improvement despite malalignment.

In my opinion a progressive neurologic deficit indicates laminectomy and a pro-

very early laminectomy reveal that there was "a sudden expulsion of the cord" when the dura was incised. The sudden release of pressure may have caused prolapse and destruction of what intact tracts may have remained after injury. 2. The physician can examine the patient thoroughly for other complications such as injury to internal organs, damage to the brain or osseous fracture. 3. The preparawere discharged walking without aids of any kind. The second study showed that none of the laminectomized and 8 per cent of the nonlaminectomized patients were discharged walking without aids of any kind. The combined study showed that 1 per cent of the laminectomized and 6 per cent of the nonlaminectomized patients were discharged walking without aids of any kind (Table 4).

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TABLE 5.—*Statistics on Ambulatory Patients of Second Study*

Patients	*Vertebral Level*	*Neuro. at Onset*	*Block*	*Bladder Sensation*	*Bladder Control*	*Ambulation*
Laminectomy						
1. R. W.	T9	*Comp.*	?	*Near normal*	*Near normal*	2 C.C. (wheel chair)
2. D. W.	T12	Comp.	Yes	None	None	1 L.L. (wheel chair) 1 S.L. 2 canes
3. W. O.	L1	Comp.	Yes	None	None	1 L.L. (wheel chair) 1 S.L. 2 canes
4. P. P.	L3	Inc.	?	None	None	1 S.L. (wheel chair) 2 C.C.
No laminectomy						
1. R. G.	C	Comp.	No	Normal	Normal	No aids
2. C. P.	C	Comp.	No	Normal	Normal	No aids
3. W. H.	C	Comp.	No	Near normal	Near normal	2 canes (wheel chair)
4. R. H.	C	Comp.	No	Near normal	None	Walker (wheel chair)
5. R. G.	L4-5	Comp.	?	Near normal	None	2 C.C. 2 S.L.

because the life span of this type of patient is directly proportionate to the status of the urinary tract, assuming that all other systems are essentially normal.[5] Urologic considerations are more fully appreciated when one realizes that fewer than 10 per cent of patients with injuries to the spinal cord have normal or nearly normal vesical sensation or control.

alike, and this is considered before a final decision is made for or against laminectomy. The age of the patient, the lapse of time since injury, the cause of injury, the roentgen, manometric and psychic factors and any coexistent complications are thoroughly studied.

ZUSAMMENFASSUNG

TABLE 3.—*Relation of Manometric Evaluations and Improvement*

	No. of Patients	Number Improved	Per Cent Improved
*First Study**			
Block			
Laminectomy	100	12	12
No laminectomy	25	0	0
No Block			
Laminectomy	21	6	29
No laminectory	106	40	38
Total	252	58	
*Second Study***			
Block			
Laminectomy	19	3	16
No laminectomy	2	0	0
No Block			
Laminectomy	3	3	100
No laminectomy	19	14	74
Total	43	20	
Combined Study†			
Block			
Laminectomy	119	15	13
No laminectomy	27	0	0
No Block			
Laminectomy	24	9	33
No laminectomy	125	54	43
Total	295	78	

*858 patients in study (252 manometric tests).

**89 patients in study (43 manometric tests).

†947 patients in study (295 manometric tests).

Scheibert has proposed that perhaps the mishap is not due to the operation but occurs during anesthesia when hyperextension is used for endotracheal intubation.[2] His suggestion that local anesthesia be used for cervical laminectomy therefore seems well founded.

Many patients arrive with a history of laminectomy performed while the patient was unconscious. The functional returns of these patients have not been remarkable; I cannot see the rationale of immediate laminectomy, therefore, in the presence of a state of unconsciousness.

One must not imply from the foregoing that time does not play a role. Once a decision has been reached to operate, the operation should be done immediately. Too often indications are based on emotions rather than on scientific facts. A familiar and frequently heard suggestion is, "If we're going to give this patient a chance to walk, he must have a laminectomy!" Yet, how many laminectomized patients ever walk (Tables 4 and 5)?

In the first study I concluded that functional return was greatest in patients with lumbar lesions, since injuries of the cauda equina are similar to peripheral nerve lesions. The second study, however, though admittedly smaller, indicates that more improvement occurred in the patients with cervical lesions. Perhaps this reversal of order of improvement can be explained by the fact that I was more critical in the second study, realizing that the functional return in patients with lumbar lesions, in most instances, was compatible with the very level of the injury. Table 5 shows that in the second study not a single patient with a lumbar lesion walked without the use of aids, whereas 2 patients with cervical lesions did. These data from the second study are even more emphasized by those of the first study, which showed that patients with cervical lesions (laminectomized as well as nonlaminectomized) were discharged without aids of any kind in more instances than were those with lumbar lesions.

Observation of patients who have undergone repeated laminectomies have not been rewarding so far as functional return is concerned. Repeated operations on lesions of the cauda equina, done in order to improve ambulation, can be dangerous; I have observed patients who lost normal sensation and control of the urinary bladder after the second intervention. Function of the bladder is highly important,

TABLE 4.—*Ambulation without Aids*

	With Laminectomy	Without Laminectomy
1st study	7/579, or 1%	16/279, or 6%
2nd study	0/ 64, or 0%	2/ 25, or 8%
Combined study	7/643, or 1%	18/304, or 6%

Bilateral Mastectomy for Carcinoma of the Breast

HENRY PATRICK LEIS, JR., M.D., F.A.C.S., F.I.C.S.

NEW YORK CITY, NEW YORK

Earlier and current methods of treatment for carcinoma of the breast are discussed briefly, and statistics on bilateral mammary carcinoma are reviewed. In the author's opinion, removal of the contralateral breast by simple mastectomy when the other is removed for carcinoma is justified and is to be recommended as a prophylactic procedure. He is convinced that the use of this procedure might well reduce the mortality rate of mammary carcinoma.

HALSTED in 1894 defined radical mastectomy and stimulated its acceptance as the best method of treatment for operable carcinoma of the breast. With the contributions of Meyer and Handley, it has remained as the standard method of treatment for more than forty years.

Recently the pendulum has been swinging back and forth from this standard of treatment. On the one extreme there is a small but increasing number of physicians who have serious doubts, with regard to mammary carcinoma, about the superiority of any type of treatment over total neglect. On the other extreme are those who advocate more extensive local, regional and endocrine surgical treatment and more intensive radiotherapy, endocrine therapy, chemotherapy, etc.

Reports by Park and Lees, McKinnon, and Phillips and Owchar seem to indicate that treatment has failed to make any impression on the mortality rate of mammary carcinoma. In recent articles Schwartz and Crile Jr. both point out that certain forms of treatment may even do harm by reducing host resistance. These reports would seem to support, at least in part, those who advocate total neglect, with reliance on the host resistance.

The type of surgical intervention advised goes from the extreme of limited surgical measures (simple mastectomy and postoperative radiotherapy as advocated by McWhirter) to the other extreme

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From the Department of Surgery, New York Medical College, Metropolitan Medical Center, New York.

Read at the Twenty-Third Annual Congress of the United States and Canadian Sections, International College of Surgeons, Los Angeles, March 9-14, [illegible]

Submitted for publication May 5, [illegible]

RÉSUMÉ

L'auteur présente une étude statistique sur la valeur de la laminectomie dans les lésions de la moëlle épinière. Il rappelle les divergences d'opinion dont elle fait l'objet, et propose une base de détermination pour son indication, constituée par la présence ou l'absence de blocage spinal manométrique.

Certaines caractéristiques ressortant de cette étude sont également présentées et commentées (statistiques sous forme de tableaux).

RESUMEN

El autor presenta un estudio estadístico del tratamiento de traumatismos de la médula espinal por la laminectomía. Señala que hay divergencias sobre este tratamiento, y toma como base, para indicar o no la laminectomía, la presencia o ausencia de bloqueo manométrico espinal.

SUMARIO

Apresenta uma estatistica do valor da laminectomia nas lesões da medula. Estabelece as diferenças de opinião e fornece as bases para determinar quando a laminectomia é ou não indicada, principamente em presença ou ausência de bloqueio manometrico.

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Many patients with high blood-pressure live for years entirely free from any symptoms of the disorder and discover it only by accident. when a physician examines them for some other ailment or after application for life insurance. If it were not for its complications, high blood-pressure in certain individuals might be quite desirable. Many powerful men of affairs have high blood-pressure, and their dynamic personalities seem to require a high pressure to maintain the tension under which they work. Unfortunately, however, Nature, who has presented these persons with the gift of power, demands her toll. As the years roll by, the arteries which have been constantly under the increased strain of the high pressure begin to thicken and then to harden, and in time the patient has a well-developed hardening of the arteries.

—*Major*

Obstetric and Gynecologic Surgery

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HALSTED in 1894 defined radical mastectomy and stimulated its acceptance as the best method of treatment for operable carcinoma of the breast. With the contributions of Meyer and Handley, it has remained as the standard method of treatment for more than forty years.

Recently the pendulum has been swinging back and forth from this standard of treatment. On the one extreme there is a small but increasing number of physicians who have serious doubts, with regard to mammary carcinoma, about the superiority of any type of treatment over total neglect. On the other extreme are those who advocate more extensive local, regional and endocrine surgical treatment and more intensive radiotherapy, endocrine therapy, chemotherapy, etc.

Reports by Park and Lees, McKinnon, and Phillips and Owchar seem to indicate that treatment has failed to make any impression on the mortality rate of mammary carcinoma. In recent articles Schwartz and Crile Jr. both point out that certain forms of treatment may even do harm by reducing host resistance. These reports would seem to support, at least in part, those who advocate total neglect, with reliance on the host resistance.

The type of surgical intervention advised goes from the extreme of limited surgical measures (simple mastectomy and postoperative radiotherapy as advocated by McWhirter) to the other extreme of extensive operation as advocated by Urban, who resects the internal mammary chain in continuity with the classic radical mastectomy, and the even more extensive surgical approach of Wangensteen, who dissects the neck, the internal mammary chain, and the mediastinum, in addition to performing radical mastectomy. Haagensen has advocated radical mastectomy as the treatment of choice but in his opinion it should be performed only on pa-

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tients who answer rigid criteria of operability including the triple biopsies, of the mammary lesion, the internal mammary nodes and the axillary apical nodes.

An excellent report of the results of endocrine therapy (estrogens, androgens and cortisone) and endocrine surgery (oophorectomy, adrenalectomy and hypophysectomy) in producing remissions and thereby increasing the survival rate among patients with metastatic carcinoma of the breast has been given by Pearson and his associates. The use of chemotherapy and immunization in the treatment of mammary carcinoma has been discussed by Black and Speer and by Schwartz.

The results of radiotherapy for this lesion have been carefully studied and reported upon by Saugmann-Jensen and Jacoby, Lenz, Sanders and Pool, Haagensen, Harrington, Taylor and others. The consensus would seem to be that it has little or no value as a preoperative prophylactic measure and that it increases the survival rate only very slightly when used postoperatively in operable cases. It is palliative, however, and will increase survival time in the inoperable cases and in those in which the tumor has recurred after mastectomy.

Faced by these and other extremely varied opinions as to the proper method of treatment for carcinoma of the breast, many surgeons find themselves in a dilemma. The purpose of this paper is not to discuss the merits of these various forms of treatment but rather to present arguments in favor of one of the least widely accepted and most infrequently tried procedures in the struggle to increase the rate of cure and/or the period of survival, namely, prophylactic removal of the contralateral breast by simple mastectomy when the other is removed for carcinoma.

I have employed this technic concurrently with or after removal of the other breast by radical mastectomy in 15 cases of operable carcinoma. Bloodgood in 1921 and Pack in 1951 recommended this procedure. Hubbard in 1953 advised prophylactic simple mastectomy of the opposite breast for patients with operable carcinoma who (a) have a family history of mammary carcinoma or (b) are premenopausal and desire to become pregnant.

The cause of bilateral mammary carcinoma may be (1) a new primary malignant focus in the opposite breast or (2) a lymphatic spread to the second breast from the first. In addition, bilateral carcinoma of the breast may be (1) simultaneous (occurring in both breasts at the same time) or (2) nonsimultaneous (occurring in the second breast at a later date).

Statistics on the incidence of bilateral mammary carcinoma are variable, and pathologists vary as regards criteria for detecting primary or metastatic carcinoma in the second breast. In reviewing many series, however, one is impressed with the fact that the average incidence of bilateral carcinoma of the breast is about 7.5 to 10 per cent. This certainly is most significant, whether the carcinoma in the second breast is primary or metastatic or whether it is simultaneous or nonsimultaneous.

Pack reported that carcinoma of the contralateral breast developed subsequently in 7.5 per cent of the patients in several series. Trevor estimated the incidence of bilateral mammary carcinoma at 8 to 10 per cent; McGill, at 7.5 to 10 per cent. Fitts and Patterson reported a series in which 1.8 per cent of the patients had simultaneous and 5.7 per cent nonsimultaneous bilateral carcinoma, a total of 7.5 per cent. Chase stated that in 2 per cent of cases the tumor is bilateral initially and will become bilateral in 5 per cent, a total of 7 per cent. In a series of 275 consecutive patients with microscopically proved carcinoma of the breast reported by Hubbard, 3 (1.09 per cent) had simultaneous bilateral. Of the remaining 272, 17, or 6.2 per cent, subsequently had microscopically proved carcinoma in the other breast and clinically apparent but unbiopsied carcinoma of the opposite breast developed in 12, or 4.4 per cent, a total of 10.6 per cent. The incidence of combined simultaneous and nonsimultaneous bilateral mammary carcinoma in the 275 cases was 11.6 per cent. Harrington, in reviewing 6,558 cases, recorded an incidence of 3.4 per cent for bilateral operable carcinoma and an equal percentage for inoperable lesions, a total of 6.8 per cent. Desaive reported an incidence of 3.2 per cent of metastatic carcinoma in the second breast; Hubbard, 4.4 per cent. Torok and Wittelshofer noted bilateral mammary carcinoma in 9 per cent, and Gross in 12.5 per cent, in their respective autopsy series. Lawson reported 100 consecutive autopsy records of women with carcinoma of the breast and pointed out that carcinoma of the second breast had occurred in more than 21 per cent.

The percentage of patients in whom carcinoma develops in the other breast would probably be still higher if the rate of cure following the initial operation were better. If only those women are considered who live long enough for carcinoma in the fellow breast to become manifest and be detected, i.e., Stage I lesions which have a prolonged survival rate, then the incidence is probably much higher than the average of 7.5 to 10 per cent given in the foregoing overall statistics.

[illegible] of carcinoma occurring in the remaining breast after removal of the first for malignant disease as 8 to 10 per cent. Hubbard reported an incidence of 5.8 cases per thousand cases of carcinoma of one breast in which nonsimultaneous carcinoma developed in the other breast, as compared with 0.84 cases per thousand in the population at large.

The multicentric origin of malignant tumors in certain organs and tissues, such as the colon, ovary, oral mucosa, skin, peripheral nerve sheaths and cartilage, is an accepted phenomenon. It is now known that this can occur in one or both breasts as well as in these other organs and tissues. The remaining breast may very well harbor an unsuspected carcinoma.

Pack stated that not infrequently in the removal of an apparently normal breast either in conjunction with or after removal of a carcinomatous opposite breast, an unsuspected focus of premalignant changes or early carcinoma is discovered in the second breast. In a series of 16 cases of prophylactic removal of the opposite asymptomatic breast in patients who had undergone mastectomy for carcinoma of the other breast, performed at the University of Minnesota Hospitals and reported by Hubbard, 2 patients were observed to have unsuspected carcinoma. I have had 2 such cases in 15 prophylactic removals of the second breast.

It has been shown anatomically by Gerota and Rouviere that the lymphatics of the skin of the two mammary regions are continuous across the midline. Oelsner demonstrated lymphatic collecting trunks extending from one mammary region to the supraclavicular region of the opposite side. In view of these transmammary lymphatic pathways, there can be little doubt that a varying percentage of mammary carcinomas will metastasize across the midline to the opposite skin, breast, axilla or supraclavicular areas.

In addition to the linking of the two breasts by these lymphatic pathways, they should be considered as an anatomic system rather than as separate and unrelated organs, because the same genetic and hormonal factors exist for both. By removing one breast for carcinoma one certainly does not remove the carcinogenic factors influential in producing the first lesion from exerting the same influence on the opposite breast. Except that local conditions in one breast may not be duplicated in the other, the same etiologic factors in the development of a malignant tumor in one breast are conceivably active in the opposite breast.

The removal of a contralateral paired organ such as the ovary, which is needed to serve an important function, is a routine procedure when the other ovary shows malignant change. Admittedly, no gross hormonal changes have so far been detected after bilateral mastectomv, but as Lawson has stated, there is much evidence to show that the breasts play a role in 17-ketosteroid metabolism. The remaining breast may exert a definite influence on those mammary carcinomas that are hormone-dependent. Bilateral oophorectomy is certainly a much more disturbing sexual mutilation than bilateral mastectomy, yet removal of the contralateral breast, which at best can only serve as a questionable badge of sexual enhancement and femininity, is not generally accepted.

The validity of prophylactic removal of the contralateral breast when the other has been removed for carcinoma is probably best supported by an increase in survival statistics for bilateral mastectomy as compared to unilateral. The prognosis for the simultaneous type of mammary carcinoma is not good. Fortunately, it is much less common than the nonsimultaneous. Harrington reported five-year survival in 61.5 per cent of cases of bilateral simultaneous mammary carcinoma in patients without axillary metastases but only 17.9 per cent for those with axillary metastases. In the more common nonsimultaneous group, however, the survival rate is better than in patients with unilateral carcinoma. Harrington, in reporting a series of 155 cases of nonsimultaneous bilateral carcinoma of the breast noted that the prognosis was better than in cases of the unilateral lesion. Cliffton and Young recorded the incidence of five-year survival in their series as 70 per cent for nonsimultaneous bilateral lesions, as compared to 54.9 per cent for unilateral carcinoma. Trevor stated that the five-year survival rate for the nonsimultaneous type frequently surpasses that for the unilateral type. Lawson, reporting a series of 32 bilateral mastectomies, observed that removal of the opposite breast materially improved the period of survival. He concluded that the mere presence of the remaining breast may deleteriously influence the course and progress of metastases.

Removal of the opposite breast by simple mastectomy in conjunction with or after a radical procedure for a carcinomatous first breast adds practically nothing to the postoperative mortality and morbidity rates, but it adds a great deal to the mental and physical comfort of the patient. Fear that carcinoma will develop in the remaining breast is removed. Symmetry is established, and with this the patient no longer feels unbalanced and has much greater ease in her dressing and movements. She is no longer forced to wear a prosthetic device, which at best is cumbersome and uncomfortable, in a hopeless attempt to match the remaining breast. Instead, she can wear a built-up strapless brassiere that often enhances, rather than detracts from, her appearance. The majority of the patients in my small series of 15 cases of prophylactic removal of the opposite breast by simple mastectomy had the second breast removed at a later date, rather than in conjunction with the radical procedure for the carcinomatous first breast. Because of this, they have an excellent basis for comparison. All are happier and more comfortable now than they were before removal of the second breast; in addition, 2 proved to have unsuspected carcinoma in the remaining breast. No other conclusions can be drawn at present, because of the small number of cases and the relatively short period of follow-up.

Despite arguments in favor of bilateral mastectomy, the procedure is poorly accepted by both physicians and patients. Only a few patients will accept prophylactic simple mastectomy of the contralateral breast at the time of planned radical mastectomy for carcinoma of the other breast, but a considerable number will accept it at a later date. Public education as to the advantages of bilateral mastectomy may increase the acceptance of this procedure and possibly provide a means of reducing the mortality rate associated with carcinoma of the breast.

ZUSAMMENFASSUNG

Fruhere und gegenwärtige Formen der Behandlung des Brustdrusenkrebses werden kurz besprochen, und Statistiken über doppelseitigen Brustdrüsenkrebs werden untersucht. Fernerhin werden die Gründe dargestellt, die zugunsten einer doppelseitigen Brustdrusenresektion sprechen, die moglicherweise zur Herabsetzung der Sterblichkeitsquote beim Brustdrüsenkrebs beitragen kann

RESUMEN

RÉSUMÉ

Bref exposé sur les traitements classiques et modernes du carcinome du sein: statistiques sur le carcinome bilatéral, et présentation d'arguments en faveur de la mastectomie bilatérale comme moyen possible de diminution du taux de mortalité dans cette affection.

SUMARIO

Discute brevemente a terapeutica passada e atual do carcinoma da mama, analiza a estatistica do ca. mamario bilateral com apresentação de argumentos em favor da mastectomia bilateral como meio de reduzir a mortalidade.

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For centuries the blood was thought to be a homogeneous red fluid filled with mysterious vital spirits, capable of much good and of equally great harm. So it was logical, perhaps, that some of the early natural philosophers injected this vital fluid into different animals just to see what would happen.

Samuel Pepys, the immortal author of Pepys's Diary, was one of those inquisitive souls interested in these experiments. Pepys owes his fame to his inimitable accounts of the people and events of his time. It should be stressed, however, that he belongs to science as well as to literature, for he was one of the founders of that learned body the Royal Society, a membership in which is still the most coveted prize of the scientific Briton. Pepys's comments on the science of his day are no less remarkable or interesting than his more widely quoted flirtations with his wife's maid, his drinking-bouts, and his comments on the various sermons he heard or slept through regularly on the Sabbath.

—*Major*

Ophthalmologic Surgery

Mass Ophthalmic Surgery under Handicaps in Pakistan

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The surgical treatment of diseases of the eye, including cataract, glaucoma, trichiasis, dacrocystitis and entropion complicating trachoma, at the Henry Holland Mission Eye Hospital at Shikarpur, West Pakistan, is described. Despite the fact that the surgeons work under many handicaps and most of the elaborate modern equipment available in large centers cannot be obtained, it has been observed that the number of operations with poor results is no greater than that recorded for similar procedures under so-called ideal conditions. The author describes the hospital itself, its organization and its working routine, as well as the technics employed for the various operations.

THE scientific history of radioactive substances is of comparatively recent origin. With the advent of the incredibly devastating power of nuclear weapons and the grim prospect of being blasted to eternity, the world has cast a collectively quizzical and apprehensive eye on scientific development. Swift catastrophic attacks similar to the insidious and barbarously treacherous Pearl Harbor assault have stirred all nations to step up preparations designed to resist havoc-laden airborne onslaught, and through new approaches to create efficacious technics of defense. All are therefore very much concerned with everything pertaining to the handling of mass ocular casualties in the Henry Holland Mission Eye Hospital at Shikarpur in West Pakistan. This hospital has been progressively developed since 1909 and cares for hundreds of patients in January and February of each year.

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—*Major*

RIASSUNTO

Viene descritta dettagliatamente la cura della cataratta e di altre malattie oculari nella Clinica Oculistica dell 'Ospedale delle Missioni H. Holland a Shikarpur (Pakistan orientale). L'autore tratta delle malattie e delle lesioni osservate, degli anestetici impiegati, delle techiche chirurgiche per la cataratta, la trichiasi, il glaucoma, la dacriocistite, tutti interventi che egli esegue con scarsi mezzi, scarsa assistenza e l'uso di un'unica lampadina elettrica sostenuta da un assistente. Egli sterilizza i ferri con l'ebollizione. I suoi risultati, tuttavia, sono altrettanto buoni di quelli ottenuti operando in condizioni ideali.

RÉSUMÉ

L'auteur décrit le traitement chirurgical de la cataracte et celui d'autres affections oculaires traitées au Henry Holland Mission Eye Hospital à Shikarpur, Pakistan occidental, avec des moyens et un équipement restreints. Il énumère les affections et lésions soignées, les anesthésiques utilisés ainsi que leurs méthodes d'application, les techniques opératoires de la cataracte, du trichiasis, du glaucome et de la dacryocystite, toutes interventions pratiquées à la lumière d'une ampoule électrique maintenue par un assistant au-dessus du champ opératoire. Les instruments sont stérilisés par ébullition. Malgré que plusieurs centaines de malades doivent être refusés chaque année, ayant dépassé le stade de l'opérabilité, il est intéressant de noter que parmi les malades ayant pu bénéficier d'un traitement, les résultats se sont révélés aussi satisfaisants que ceux obtenus dans des conditions techniques modernes idéales.

medades oculares en el Henry Holland Mission Eye Hospital de Shikarpur en Pakistán Occidental a pesar de la limitación de material, facilidades y equipos. El autor describe las enfermedades y lesiones encontradas, los anestésicos empleados, los métodos de inducción anestésica y la técnica de operación para la catarata, la triquiasis, el glaucoma y la dacriocisstitis, todas las cuales han de ser llevadas a cabo a la luz de una bombilla eléctrica sostenida a mano por un ayudante. Todos los instrumentos son esterilizados por ebullición. A pesar de que cada año varios cientos de enfermos no pueden llegar a beneficiarse de la cirugía por tenor cataratas con glaucoma absoluto, es significante el hecho de que en aquellos que han sido operados se han obtenido tan buenos resultados como los que se obtienen donde son posibles las condiciones ideales modernas.

ZUSAMMENFASSUNG

Es liegt eine detaileierte Beschreibung der chirurgischen Behandlung des Katarakts und anderer Augenerkrankungen vor, wie sie im Henry-Holland-Missions-Augenkrankenhaus in Shikarpur, West-Pakistan unter grosser Beschränkung von Hilfsmitteln, Krankenhausmaterial und Apparaturen ausgefuhrt wurde. Der Verfasser berichtet über die Krankheiten und Verletzungen, die zur Behandlung kamen, uber die verwendeten Anasthetika, die Methoden der Einleitung der Anasthesie und uber die Operationstechnik beim Katarakt bei Trichiasis, beim Glaukom und bei der [illegible]

through it. The sac itself is not stitched. The edges of the skin are accurately sewn together with interrupted cotton sutures. A firm pad and bandage are applied. The dressing is changed every two days. The sutures are removed on the sixth day after the operation.

In these various operations, an assistant holds an electric light over the eye to be operated upon. All instruments are boiled, cutting as well as non-cutting. In the matter of preoperative preparation, it has been the experience of this clinic that conjunctivitis, dacryocystitis and pyorrhea are contraindications to cataract extraction. Trachoma unaccompanied by purulent conjunctivitis is not dangerous. All eyes are thoroughly irrigated with 1:2,000 mercury bichloride solution immediately prior to the operation, and the contents of the meibomian glands are thoroughly squeezed out. The operative results have been just as good with trachoma patients. A glaucomatous eye with early cataract is handled as follows: An iridencleisis is performed at 6 o'clock, so that the regular iridectomy may be performed at 12 o'clock when the cataract extraction is finally performed. When the cataract knife is inserted into the glaucomatous eye it is passed across the anterior chamber, and a bleb of aqueous fluid is permitted to form on the opposite side, under the conjunctiva, before the incision is completed through the conjunctiva on the opposite side. This enables the tension to be relieved gradually, thus preventing dislocation of the lens. The extracapsular extraction is performed on one-eyed patients, patients of the plethoric type—that is, patients with large, bulging eyes—and patients with glaucomatous cataract. On all other patients the intracapsular extraction is performed. If the lens becomes dislocated after incision, the operation is frequently completed by a regular Smith type of lens knife expression. This is done as follows: The spring speculum is inserted. The cataract knife is inserted into the anterior chamber and held at right angles to the cornea until it has pierced all layers. The handle of the knife is then lowered until it occupies a horizontal position. It is next carried across the anterior chamber, the section being completed at the corneoscleral juncture. No conjunctival flap is made, and no sutures of any kind are used. The iris is then grasped with the iris forceps and quickly cut with Dewecker iris scissors. The spring speculum is next removed; the upper lid is lifted forward on a blunt hook retractor, and the lower lid is held back by the fingers of an assistant. Loosening of the zonular fibers and expression of the lens are accomplished by use of the blunt tip of a curved hook and a wide, flat spatula. Should vitreous present, the operation is immediately terminated by placing the spatula under the lens and extracting it. Should a dislocated lens fall into the vitreous, it is removed immediately with a vectis, or hollow spoon. Patients who have undergone extrascapular extractions are dressed for the first time on the third day, those who have undergone intrascapular extraction, on the fifth day. In uncomplicated cases the patients are discharged on the tenth day.

One must not fail to mention that each year several hundred patients are turned away because they are beyond help. The diagnosis in these instances is cataract with absolute glaucoma.

A significant fact for the ophthalmic surgeon is that, in spite of the tremendous number of patients handled under handicapped conditions, the number of operations that turn out badly is no greater than among patients cared for under the most "ideal" conditions. This demonstrates that, if technic is carefully adjusted to field conditions, excellent results may be obtained.

Orthopedic Surgery

Treatment of Colles' Fracture

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The author describes the history, incidence, diagnosis, roentgen aspects and treatment of Colles' fracture, which, in his opinion, is one of the most frequently mishandled of all fractures despite its common occurrence. It should be reduced as early as possible and the reduction thoroughly tested for soundness and permanence. He recommends intravenous pentothal as an anesthetic agent, although in some cases he employs 1 to 2 per cent procaine hydrochloride or brachial block anesthesia. His technic of handling this fracture, as well as the care of the patient in the postoperative state, is described in detail. Complications, such as circulatory impairment, redisplacement of the fracture, rupture of the extensor pollicis longus tendon, Sudeck's atrophy, the carpal tunnel syndrome and arthritis are also discussed. In the treatment of Colles' fracture, physiotherapy is less important than the use of active

ABRAHAM Colles first described the fracture associated with his name in the "Edinburgh Medical and Surgical Journal" (cited by Watson-Jones[1]) in 1814. The fracture occurs in the distal end of the radius, within 1 inch (2.5 cm.) of the wrist joint, and extends through the whole thickness of the shaft. with backward displacement of the distal fragment. In addition, there are displacement and tilting of the distal fragment to the radial side, with rotation in supination, and the fragments are impacted. There may be secondary fracture lines extending into the wrist joint. Often there is an associated fracture of the ulnar styloid process.

Incidence.—The Colles fracture is considered second in order of frequency to fracture of the clavicle. It may occur at any age but is especially common in persons past middle age, whose bones are weakened by rarefactive changes.

It is usually due to a fall on the outstretched and pronated palm, which drives the hand backward and to the radial side. Less frequently it occurs as a backfire injury rotated along its longitudinal axis, or (4) translated parallel to its longitudinal axis.

The backward and upward displacement of the distal radial fragment results in a disruption of the inferior radioulnar joint. If the displacement is marked the ulnar styloid is frequently fractured, owing to strain exerted through the ulnar collateral ligament.

Diagnosis.—In the typical case with displacement, the deformity produced by the upward and backward displacement of the distal radial fragment can be seen and palpated, with a depression at its upper edge; the lower end of the proximal fragment forms a prominence on the volar aspect of the wrist, filling the anterior hollow. The relative levels of the radial and ulnar styloid processes are always altered, the radial styloid being at the same level as the ulnar styloid, or higher whereas normally it is ¼ to ½ inch (0.6 to 1.2 cm.) lower than the ulnar styloid. The line of fracture is extremely tender, and there is tenderness over the ulnar styloid or attachment of the ulnar collateral ligament to it. In fractures without displacement, all these signs may be absent except swelling and tenderness localized to the fracture site.

Roentgen Examination.—The importance of roentgen examination of all suspected fractures of the wrist must be emphasized; complicating injuries, such as scaphoid fractures and dislocations, can be recognized and appropriately treated. Roentgenograms should be taken in both anteroposterior and lateral views. In the normal wrist the radial styloid lies ¼ to ½ inch (0.6 to 1.2 cm.) below the ulnar styloid and the radial and ulnar articular ends form a smooth concavity. In the lateral view the articular surface of the radius faces anteriorly about 5 to 10 degrees as well as distally.

Anesthesia.—I have found intravenous pentothal very satisfactory and use it almost routinely. Occasionlly I employ either local anesthesia, with 1 to 2 per cent procaine hydrochloride into the fracture hematoma, or brachial block anesthesia.

Treatment.—In addition to being one of the commonest fractures. Colles' is also one of the most frequently mishandled. It is very often treated as a minor fracture, without adherence to the principles of fracture treatment, and after two or more attempts at reduction the residual deformity is accepted by the surgeon and the fracture immobilized, with resultant disability.

Reduction of the fracture should be done as soon as possible. Many methods of reduction have been employed; one commonly employed is the maintenance of strong traction for a few moments, after which the hand and the distal fragment are forced into hyperextension to break up the impaction. This is followed by manipulation. Often this does not disimpact the fragments; it may result in increased trauma with swelling, and a good reduction is not obtained. After a recheck by the fluoroscopic or roentgen examination, further manipulation is attempted. One is then often inclined to accept as satisfactory the reduction obtained, which may not be satisfactory from the anatomic and functional points of view.

Carothers and Boyd[3] stated: "We feel that strong traction in the longitudinal axis of the radius is an adequate means of overcoming radial impaction and dorsal displacement though a certain amount of moulding may be necessary to complete the reduction." They employ the "finger trap" introduced by Caldwell (cited by Carothers and Boyd), which is applied to the thumb and a cord with the desired amount of traction. After five to fifteen minutes of traction fluoroscopic examination is made, and, if reduction is not complete, manipulation and moulding usually effect a satisfactory reduction. They prefer the vertical to the horizontal position of the forearm during traction.

In my experience, traction and countertraction for a minimum period of ten minutes is the simplest method of overcoming impaction of the fragments and tension of the muscles of the forearm. When two assistants are available, one applies countertraction to the lower part of the arm above the elbow, flexed at 90 degrees, avoiding direct pressure to the brachial artery, while the surgeon applies traction to the thumb and little finger, the pull of traction and countertraction being steadily applied. No great pulling force is necessary. *One repeatedly observes that the* bony deformity disappears as a result (When only one assistant is available, countertraction may be applied by a band around the lower part of the arm over an abdominal pad and fastened to a hook in the wall or other convenient object.) After the ten-minute period of traction and countertraction the second assistant takes over the traction and the surgeon, after studying the roentgenograms, manipulates the fracture. Traction and countertraction are maintained during manipulation, with subsequent *application of plaster of paris.* I employ the maneuver of Sir Robert Jones to complete reduction. In reducing a right Colles' fracture the surgeon faces the patient, places his right hand with the thenar eminence against the projecting lower end of the shaft of the radius on volar aspect of the wrist, which is in midpronation, and his left hand [illegible]

a result of the continued traction and countertraction the fracture is readily disimpacted, and with the manipulation as outlined *no great force is required.* No added trauma is superimposed, and postreduction swelling is minimal. I prefer to reduce the fracture as *soon* as possible after the injury. The object of treatment should be complete restoration of the normal anatomic configuration.

Fluoroscopic study is not employed during reduction of a Colles' fracture. By the aforedescribed procedure a good anatomic reduction is obtained without exposure of the surgeon to unnecessary irradiation, with its possible dangers.

Tests of Reduction:—Immediately after reduction, the following clinical tests are applied:

1. The deformity must have disappeared.
2. The radial styloid process must be ¼ to ½ inch (0.6 to 1.2 cm.) distal to the ulnar styloid.
3. The wrist can be flexed to almost a right angle without effort.
4. Palpation must reveal the smooth concavity of the anterior surface of the lower end of the radius.

After satisfactory reduction is obtained, the hand is deviated ulnarward in the "pistol-shot position," in the *neutral* position or in slight flexion in midpronation, and an unpadded plaster of paris three-quarters cast is applied as follows: a plaster splint consisting of six layers of 6-inch (15 cm.) plaster (Gypsona) is ap-

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En el tratamiento de la fractura de colles tiene mucha más importancia el uso activo de los músculos de la articulación afectados que la fisioterapia.

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Der Verfasser beschreibt die Geschichte, die Häufigkeit, die Diagnose, die Röntgenbefunde und die Behandlung der typischen Radiusfraktur, die er trotz ihres häufigen Vorkommens für die am häufigsten misshandelte aller Frakturen hält. Der Bruch sollte so früh wie möglich eingerichtet und die Stellung der Fragmente sorgfältig auf Korrektheit und Dauerhaftigkeit geprüft werden. Zur Anästhesie empfiehlt er die intravenöse Verabfolgung von Pentothal, obwohl er gelegentlich auch ein- bis zweiprozentige Novocaineinspritzungen oder eine Umspritzungsanästhesie des Brachialnerven verwendet. Seine Behandlungstechnik un die Versorgung des Kranken nach dem Eingriff werden in ihren Einzelheiten beschrieben. Ferner werden Komplikationen wie Kreislaufstörungen, Verschiebung der Fragmente, Riss der Sehne des langen Daumenstreckers, Sudecksche Atrophie, das karpale Tunnelsyndrom und Arthritis erörtert. Physiotherapeutische Massnahmen sind zur Behandlung der typischen Radiusfraktur nicht so wichtig wie die Durchführung aktiver Fingerübungen seitens des Patienten.

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Section en Francais

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Si la question était résolue, nous devrions obtenir très rapidement et de manière quasi habituelle, le retour de mouvement de flexion--extension dans les doigts opérés—nous devrions savior le pourquoi des échecs et le pourquoi des succès. Or nous sommes actuellement très loin de là; pour les chirurgiens les plus expérimentés, la même opération faite dans des conditions identiques peut aussi bien amener un succès qu'un échec sans que ni l'on ni

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—le problème est mal posé, car on le considère comme d'ordre mécanique et l'on cherche sa solution dans des détails de technique alors qu'il est d'ordre essentiellement biologique.

A. *Quelques idées trop théoriques, généralement admises.*

1) *La greffe est meilleure que la suture*

Tous les chirurgiens de ma génération ont vécu (et beaucoup vivent encore) sur ce postulat que l'échec de la suture tendineuse vient de ce que seule adhère la ligne de suture. Ils croient que si cette adhérence se fait au milieu d'éléments souples comme à la paume de la main et au poignet, elle est sans importance et les résultats sont bons. Si par contre elle se fait au niveau du canal digital, lâ où le tendon coulisse très exactement dans un canal ostéo-fibreux, l'adhérence équivaut à un blocage et signe l'échec. De là l'idée sur laquelle étaient basées toutes les techniques dites modernes, de ne pas faire de suture à ce niveau et d'utiliser une greffe qui a l'avantage théorique de reporter les sutures aux deux extrémités, là où l'adhérence est sans importance.

Malheureusement, si au point de vue mécanique, cette conception est admissible, au point de vue biologique, elle est absolument illusoire, car une greffe pour vivre est réhabitée par la périphérie, de même que les sutures pour être solides, doivent être réparées par un processus périphérique.

Par nos travaux histologiques avec LaFaury[8] nous avons montré:

—que le tendon sectionné dégénérait sur une longueur parfois très grande et qu'il se transformait en tissu conjonctif cicatriciel banal, pas toujours en son centre, mais toujours à sa périphérie.

—que la réparation se faisait par la périphérie, c'est à dire par la gaine synoviale qui présente alors un caractére tout à fait original. A l'état normal, elle est un organe de glissement. Après section, elle devient un organe de réparation.

La réparation est essentiellement périphérique que ce soit pour le tendon simplement suturé ou bien que ce soit pour une greffe interposée entre la phalangette et l'origine du lombrical. La réparation axiale n'est qu'une vue de l'esprit, comme le prouvent:

a) certaines de nos réinterventions qui dès le 15eme jour ont montré que la greffe était entièrement enveloppée par une couche conjonctive qui la bloquait complètement.

b) par les essais que nous avons fait d'éngainement des sutures dans du Polyéthylène, sutures qui ont toutes désuni, car, à la réintervention on constatait qu'il n'y avait eu aucun processus de réparation axial.

c) par les études expérimentales de Teneff et Fonda,[16] de Skoog et Persson[15] sur la revascularisation des greffes dans le tendon d'Achille du chien, qui se fait d'abord perpendiculairement à partir de la périphérie pour, après le 15eme jour, s'orienter progressivement longitudinalement arrivant en deux mois environ, à retrouver la structure longitudinale du tendon normal.

2) *Les adhérences résultent de défauts de technique*

C'est une erreur absolue; et de nos travaux, il résulte que les adhérences changent complètement de signification. Elles ne constituent has un accident fortuit, évitable, que l'on peut et doit éviter par des perfectionnements technique ou par une manière particulière d'opérer (technique dite atraumatique). Elles représentent un élément indispensable à la réparation tendineuse: ou bien le tendon est réparé, la greffe est revascularisée mais au prix des adhérences. Ou bien, il n'y a pas d'adhérence et la réparation ne se fait pas.

Ces simples faits changent complètement la position du problème de la réparation des tendons fléchisseurs chez l'homme: *la difficulté n'est pas d'éviter les adhérences: la difficulté est d'assurer la libération de celles ci.* Et c'est là, où les résultats expérimentaux ne peuvent être comparés aux résultats clinique car, si chez l'animal, la libération des adhérences se fait habituellement et progressivement un mois après la réparation, chez l'homme il n'en va de même que très irrégulièrement. Lorsque les adhérences se libèrent, on obtient un succès: si elles persistent, l' échec est manifeste.

Malheureusement cette libération est imprévisible et nous ne savons pas comment en gouverner l'évolution. Nous sommes dans la situation d'architectes qui ayant construit une maison grâce à des échafaudages, ne savent pas comment faire disparaître ceux ci, sauf en les laissant crouler.

La libération des adhérences est imprévisible, car leur étendue, leur importance et leur solidité varient d' un cas à l' autre. Les réinterventions le montrent bien: dans les mêmes conditions de technique, certaines adhérences sont discrètes, d'autres constituent une masse envahissante qui englobe tous les tissus péri tendineux, depuis l'os jusqu' à la peau. Seules des variations personnelles d'un blessé à l'autre peuvent expliquer ces différences.

Les adhérences sont en somme du tissu conjonctif cicatriciel: mais si le consoit à la fois solide et mobile. La solidité est le problème primordial car sans elle la mobilité n'est pas possible. Mais la réciproque n'est pas vraie car un tendon solide n'est pas forcément mobile, malheureusement.

De ces deux problèmes, celui de la mobilité n'est pas d'ordre technique: il est d'ordre biologique et sa solution nous échappe. Par contre celui de la solidité est au contraire d'ordre purement technique et la valeur de l'acte chirurgical influe beaucoup sur lui. Or il y a deux causes d'échecs qu'il faut savoir reconnaitre: les échecs par désunion et les échecs par blocage. La désunion est plus fréquente qu'on ne le croit: elle se manifeste lorsque le doigt réparé est en extension. Le blocage se reconnaît à ce que le doigt est resté dans l'attitude de flexion qu'il avait à la fin de l'opération et qui a été maintenue par l'appareillage: mais la flexion volontaire dans les phalanges est négligeable. Par conséquent la qualité de la technique conserve son importance, mais elle se manifeste surtout dans la solidité de la réparation.

2) *Mérites comparés de la suture et de la greffe.*

La discussion sur la réparation par suture ou par greffe est à nos yeux purement académique. Il n'y a aucune raison biologique de préférer la greffe à la suture: par conséquent il n'y a aucune raison à

Dans les opérations secondaires et à plus forte raison dans les opérations tardives, la dégénérescence des extrémités tendineuses, la rétraction musculaire ne permettent plus une approximation normale, sans traction, des extrémités sectionnées. La greffe est alors obligatoire mais elle ne peut être constituée par un simple pontage qui aboutirait nécessairement à l'échec: elle doit s'étendre depuis l'insertion du lombrical à la main jusqu'à la phalangette, au doigt, condition admise par tous, pour l'obtention d'un pourcentage honorable de résultats.

3) *Date de la mobilisation*

Les constatations biologiques que nous avons exposées montrent bien l'inutilité de la mobilisation précoce puisqu'elle est obligatoirement freinée par le développement des adhérences porte-vaisseaux nécessaires à la consolidation de la suture et à la revascularisation de la greffe. Elles montrent également le peu de danger d'une mobilisation avant la 3ème semaine, date établie expérimentalement par Mason et ses collaborateurs,[10, 11] car elle fixe la consolidation du cal tendineux. En effet, du fait des adhérences obligatoires, la force ne s'exerce que très peu sur les sutures. Pour nous nous commençons la mobilisation quand les sutures sont complètement et solidement cicatrisées, c'est à dire du 12ème au 15ème jour.

4) *Possibilité d'un traitement hormonal per et post opératoire*[2]

Le tendon n'est que du tissu conjonctif différencié.[1, 2, 4] Sa réparation obéit nécessairement aux commandes neuro-hormonales, qui dirigent la cicatrisation conjonctive.

Vue sous l'angle neuro-hormonal, on se rend compte de la complexité du système mis en jeu par la réparation tendineuse. Les hormones anaboliques doivent se présenter les premières et commander à la reconstruction du tendon: ensuite des hormones cataboliques doivent présider à la destruction de la cicatrice. Mais l'ordre d'action de ces hormones est anormal, car toujours dans l'économie, la réparation d'une plaie commence par une phase catabolique puis seulement en second, apparaît la phase anabolique.

Pour diriger la formation et la disparition des adhérences, il faudrait être parfaitement au courant de l'action et du dosage des produits que nous avons à notre disposition: d'une part le groupe STH-minéralo corticoïdes pour l'anabolisme; d'autre part le groupe ACTH, cortisone-glyco-corticoïdes, pour le catabolisme. Malheureusement, les choses ne sont pas si simples et les essais de traitement biologiques que nous poursuivons depuis près de deux ans sont encore loin d'être concluants.

Nous nous sommes rendus compte que l'utilisation des hormones anaboliques était sans intérêt, car les échecs sont beaucoup plus dûs aux adhérences qu'aux désunions (ces dernières étant attribuables à des erreurs de technique). Nous nous sommes donc cantonnés dans l'utilisation des hormones cataboliques, administrées par voie générale et par voie locale. La question est en pleine étude, elle sera discutée au prochain Congrès Français de Chirurgie Plastique (Septembre 1958) il serait prématuré d'en parler ici, car nous n'avons encore aucune directive précise et éprouvée à présenter.

COMMENTAIRES

Ces idées nous ont amené à adopter la ligne de conduite suivante: utiliser la suture quand elle est possible, utiliser la greffe dans tous les cas où la suture sans traction est impossible.

Plaies récentes

Dans les plaies fraîches, nous suturons donc les tendons sectionnés, mais à deux conditions:

1. ne pas les opérer immédiatement,

mais les opérer en urgence différée (delayed émergency)

2. lorsqu'il s'agit de plaies siégeant au canal digital, les traiter par les techniques particulières exposant et cousant au minimum les extrémités tendineuses rapprochées.

La notion *d'urgence différée* est capitale à nos yeux; c'est une notion générale[6, 7] qui commande toute la conception moderne de l'urgence, c'est à dire de ne pas intervenir avant que le malade ne soit bien préparé. Elle trouve à la main une application magnifique grâce à laquelle nos résultat actuels sont nettement améliorés. Dès que le blessé arrive, la main est nettoyée, immobilisée et pansée avec une solution d'ammonium quarternaire (cétavlon, biocidan) : on lui administre de la pénicilline et l'on établit et corrige si besoin, son bilan humoral. Il ne sera opéré que un, deux, même trois jours aprés, le pansement renouvelé tous les jours montrant que la main est absolument propre: l'opération est éxécutée dans les meilleures conditions physiques et matérielles, par le chirurgien le plus compétent disposant de tout le temps et de tout le matériel nécessaire. Le gros argument contre les sutures primitives tombe ainsi puisque le danger d'infection post opératoire, même atténuée, disparait grace a ces précautions.

Les procédés de suture sont délicats: il

un seul point de fil très fin qui ne sert qu'à maintenir l'approximation.

Ces deux procédés ont en commun le souci de léser au minimum les extrémités tendineuses. On trouvera leur description complète dans notre nouvel atlas de technique.

Plaies anciennes

Dans les plaies anciennes, la dégénerescence des extrémités tendineuses, la rétraction musculaire interdisant la suture; nous utilisons alors les greffes minces, selon la technique de Pulvertaft, en réinserant d'qbord l'extrémité distale sur la phalangette par le procédé en pull out transphalangien trans unguéal de Sterling Bunnell et en suturant l'extrémité centrale au fléchisseur profond, dans la région du lombrical, par transfixion comme le fait Pulvertaft.

Suites opératoires

La mobilisation est commençée vers le 12ème-15ème jour au plus tard, mais pas avant que les sutures cutanées ne soient parfaitement cicatrisées. C'est de celle-ci que dépend le succès ou l'échec: en cas de succès, la flexion volontaire des phalanges ne cesse de progresser.

En cas d'échec, il faut en distinguer la cause pour pouvoir la traiter.

s'il s'agit d'échec par désunion, le doigt qui avait été mis en flexion légère au cours de l'opération se trouve en extension. Inutile alors de poursuivre indéfiniment extension continue par lames d'acier très souples selon un appareillage décrit par LeVame[9] qui permet en même temps la flexion active de la rééducation. Nous récupérons ainsi un certain nombre d'échecs très rapidement.

Si l'extension continue échoue malgré le traitement hormonal que nous lui adjoignons, il reste la ressource d'un déblocage chirurgical par ténolyse.[12] Grâce à cette opération on augmente encore le nombre des succès à condition que le blocage siège devant la première phalange, c'est à dire, au maximum à la base du doigt. Si le blocage siège à la deuxiéme phalange la libération du tendon est compliquée par la rétraction cutanée qui est constante et pose pour finir de délicats problèmes de fermeture.

On voit donc les différents avantages de la suture quand elle est possible: ses résultats ne sont pas plus mauvais que ceux de la greffe, mais ils sont acquis avec un gain de temps extrêmement précieux: en cas d'échec par blocage, la ténolyse est relativement facile et donne de beaux succès; en cas d'échec par désunion il est possible de reprendre l'opération en utilisant une greffe.

RÉSUMÉ

1. A l'heure actuelle, il est encore impossible de prévoir les résultats d'une réparation tendineuse des fléchisseurs, quelque soit la technique employée, même par le chirurgien le plus qualifié.

2. Pour bien comprendre la position de ce problème, il faut réaliser qu'une réparation postule deux conditions: la solidité et la mobilité du tendon réparé.

La solidité est un problème technique, dépendant de la qualité et de la nature des sutures ou des greffes.

La mobilité est un problème biologique, celui de la libération des adhérences, qui ont servi à réparer le tendon. En effet le cal fibreux unitif se reconstitue par la périphérie et non par bout à bout.

3. L'adhérence n'est pas un accident évitable par des précautions et artifices techniques: elle représente un processus normal, indispensable à la réparation de la suture ou à la revascularisation de la greffe. Toute la question est d'obtenir la disparition de ces adhérences, une fois qu'elles ont rempli leur rôle constructif. Le seul procédé que nous connaissons pour influer sur cette libération est la mobilisation active, volontaire, personnelle de l'opéré.

4. Ce procédé est aussi aléatoire qu'empirique: dans l'état actuel de nos connaissances, la résorption du cal fibreux est d'ordre neuro-hormonal. On peut admettre que pour réparer un tendon, il faut que deux variétés d'hormones entrent en jeu successivement. D'abord des hormones anaboliques pour en assurer la solidité, puis des hormones cataboliques pour en assurer la mobilité.

5. Jusqu'à présent, nos travaux pour utiliser les hormones en pratique, n'ont pas amené de résultat probant et des deux problèmes sus-énoncés, celui de la mobilité ne dépend pas du chirurgien pour le moment, mais uniquement de l'opéré.

6. Par contre delui de la solidité, affaire de technique, dépend absolument de l'art de l'opérateur. Le chirurgien doit obtenir un tendon solide, mais le procédé avec lequel il l'obtient importe peu. Les discussions entre les mérites de la suture et de la greffe deviennent académiques; si l'on peut réparer par suture, autant le faire. Si la suture est impossible sans traction il est indispensable de recourir à une greffe.

7. Or la suture n'est possible que sur des lésions fraîches, avant tout remaniement tendineux et toute organisation cicatricielle. Dans les plaies récentes il y a donc tout intérêt à faire des sutures primitives, même au canal digital, plutôt que

de sacrifier le tendon et faire d'emblée une greffe.

Mais suture primitive ne veut pas dire suture immé diate, sitôt après la blessure, car elle se fait alors sur une peau non préparée, sur un malade non préparé et dans des conditions de matériel, de personnel et d'expérience trop souvent insuffisantes. La suture doit être faite en *urgence différée* après le temps nécessaire à une préparation adéquate.

La suture aux doigts sera faite suivant des techniques particulières: sutures bloquées et sutures appuyées.

8. Dans tous les cas opérés secondairement, la dégénérescence tendineuse, la rétraction musculaire empêchent l'approximation harmonieuse des extrémités avivées: on aura donc obligatoirement recours à des greffes mises en place selon les techniques universellement adoptées.

9. Il y a deux variétés d'échecs de la réparation tendineuse: ceux par désunion, ceux par blocage. Dans les échecs par désunion (donc par manque de solidité de la cicatrice tendineuse) le doigt est en extension et les résultats d'opérations itératives sont très aléatoires.

Dans les échecs par blocage, le doigt est en flexion, et tous les espoirs de récupération sont autorisés, soit spontanément, par l'exercice et l'extension continue, soit par des libérations secondaires.

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Yodopexia y Nefrogramas

(Iodopexy and Nephrograms)

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EL estado actual de nuestros conocimientos acerca la fisiología de la glándula renal, permiten considerar a ésta como un órgano de excresión, toda vez que la mayoría de los elementos que el riñón elimina son productos desechados por el organismo en la fase terminal metabólica, inoperantes para el individuo, e incluso algunos, tóxicos como revela el acúmulo de ciertas substancias en los casos de fallo grave de la función excretora del riñón. No se puede dejar en olvido la función secretora de la glándula al producir ciertas substancias que si bien la mayoría son luego excretadas, algunas se reintegran al torrente circulatorio para sufrir modificación o estimular nuevas secreciones como es el caso de la renina; pero en la problemática que aquí se plantea, sólo interesa el riñón como órgano de excreción de substancias exógenas con fines diagnósticos.

Merced a esta última función, nos es permitido el estudio funcional del riñón mediante la valoración de ciertas substancias exógenas excretadas, provocando artificiosamente esta actividad mediante la inyección de cuerpos extraños en el individuo y observando las peculiaridades de su excreción por el riñón; de la forma o rapidez de la eliminación de tales cuerpos exógenos se valua el estado de la función excretora renal.

Entre las substancias exógenas que se utilizan para la valoración funcional renal, figuran los contrastes yodados que dan a la orina la posibilidad de absorción roentgenológica, presentando el doble interés de la valoración de la función renal desde el punto de vista excretor de la glándula y revelando además, la morfología y la función de las vías urinarias. Actualmente, por esta última propiedad informativa se reduce de rechazo, el estado de la función propia del riñón, y que por el momento justifica ampliamente su empleo cotidiano en la práctica clínica de investigación diagnóstica en los urópatas.

El tránsito renal de las substancias de constraste urográfico no está perfectamente esclarecido, de aquí que no podamos exigir a este ensayo fisio-clínico su total rendimiento, pues el fenómeno íntimo de le excerción yódica por el riñón no es exactamente conocido y solamente valoramos el fenómeno a través de las imágenes de relleno de las vías urinarias. Por la densidad comparativa entre las sombras proyectadas por cada pielograma, enjuiciamos la función renal, si bien escapan a nuestros conocimientos los fenómenos de la excreción yódica, los cuales limitan la perfecta valoración de las imágenes como exponente de la función glandular.

Conferencia en la Catedra de Urologia del Prof. Bernard Fey Hospital Cochin, Paris, marzo de 1958.

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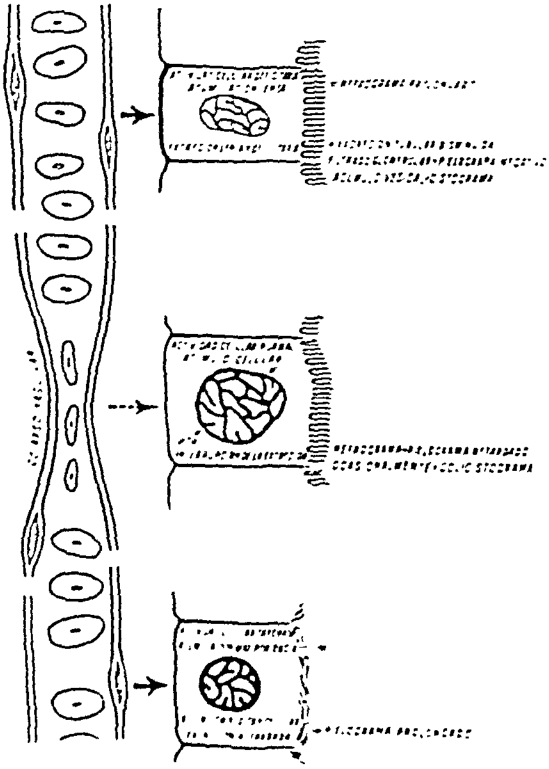

Fig. 1.

En la actualidad el creciente interés en la investigación urográfica de los pacientes, débese orientar a la obtención e interpretación de nefrogramas como medio para el mejor conocimiento de la patología renal, pues, no hay duda que para un futuro inmediato, cuando alcancemos le obtención de nitidos nefrogramas, completados por los correspondientes aumente el caudal y la calidad de nuestros conocimientos clínicos.

Entretanto permítasenos distinguir tres tipos de nefrograma, resultado de las observaciones clínicas, advirtiendo que por el momento no podemos sentar fundamentos etio-patogénicos claros con respecto a los mismos, y sólo su discriminación como evidencia de actividad funcional renal.

Podemos distinguir el nefrograma por hipofunción renal, el nefrograma por inhibición o por intolerancia, como le ha llamado Couvelaire, y el enfrograma por retención. Cada una de estas tres modalidades del nefrograma expone un sentido patogénico el que se fundamenta la clasificación, y ello permite su enjuiciamiento relativo, no selectivo, con respecto a la función parenquimatosa renal en terreno de hipótesis.

Calificamos de nefrograma por "hipofunción" el que se observa en pacientes cuya capacidad funcional del riñón es limitada o deficitaria sin haber llegado a alcanzar la insuficiencia y corresponde a pacientes con nefropatías evolutivas bilaterales que tienden a la nefroesclerosis. En algunos de estos nefrópatas cuya cifra de urea permite la práctica de la exploración urográfica, con el fín de conocer y destacar posibles alteraciones de las vías, se alcanza, con frecuencia, la visualización bilateral del nefrograma acompañado de

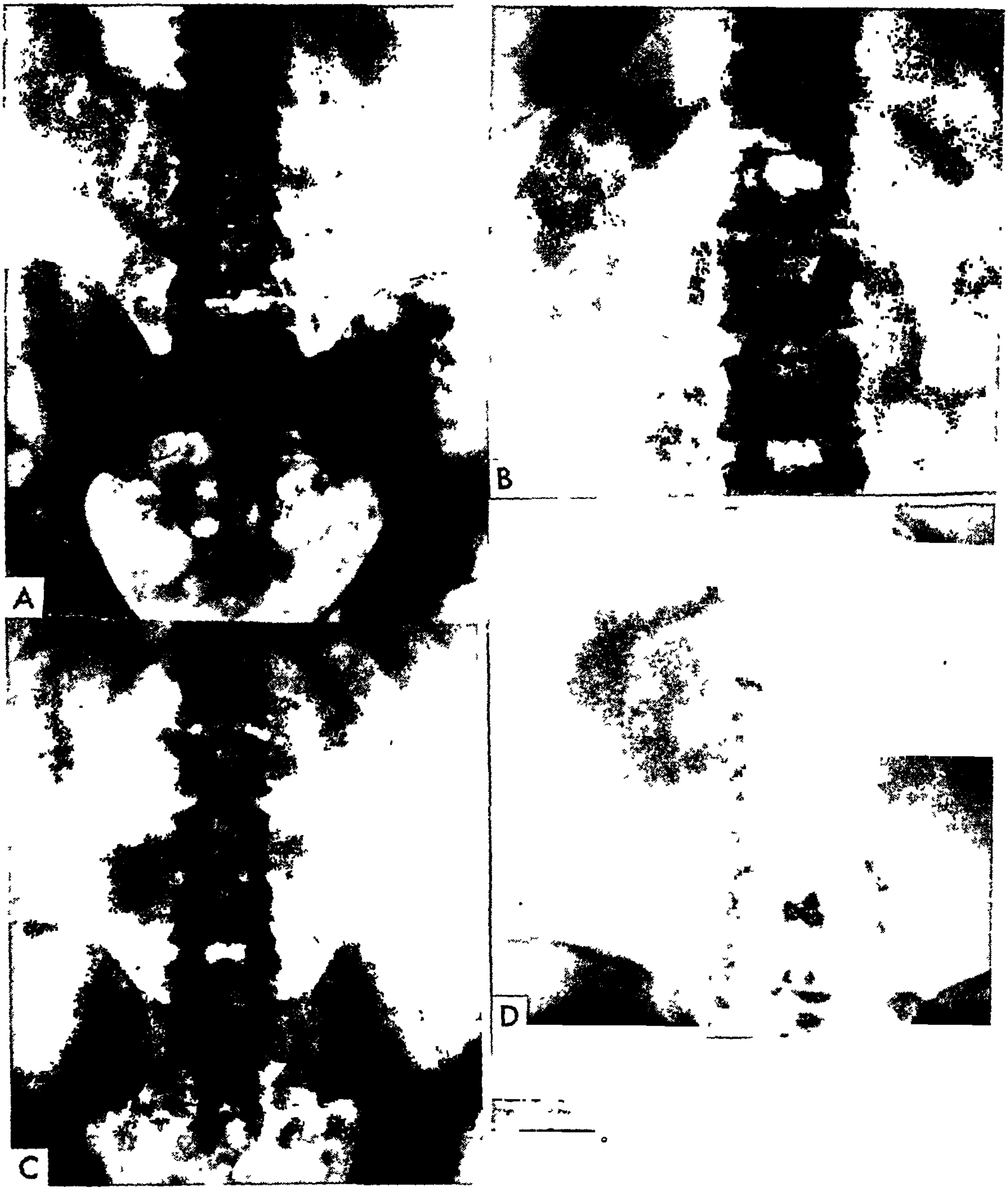

Fig. 2 (H.C. 13315).—*A*, néfrograma izdo. a los 15 minutos de la inyección del contraste: a los 45 minutos el riñón izdo. seguía silencioso y le fué propuesta la nefrectomía. *B* (H.C. 16913), nefrograma bilateral en un paciente con nefro-esclerosis juvenil evolutiva. *C* (H.C. 16913), nefrograma bilateral y cistograma, a los 35 minutos. *D* (H.C. 27487), nefrograma por inhibición a los 10 minutos de la inyección. El período de schock, con T.A. Máx. 5—La imagen de ambos nefrogramas es borrosa por el temblor que sufría el enfermo.

Fig. 3 (H.C. 27487).—Nefrograma por inhibición a los 15 minutos. Más destacado por haber cesado el temblor y la T. A. Máx. ligeramente remontada.

frograma + cistograma), se observa precisamente en pacientes con nefroesclerosis evolutiva *que defienden la suficiencia renal* de excreción mediante isostenuria con poliuria compensadora, la proporción de substancia yodada disuelta por c.c. de orina es tan baja, que dado el escaso volumen de líquido acumulado en la pelvis, no alcanza la suficiente absorción de Rayos Röentgen, para que imprima suficiente impacto en la placa radiográfica, lo que además queda enmascarado por el propio nefrograma; alérgico, manifestado por hipotensión, lipotimia, vómitos, diaforesis profusa, etc. En estos pacientes, si se impresiona una placa radiográfica poco después de la inyección endovenosa, durante o inmediatamente después de finalizado el ápice de la crisis alérgica, suelen obtenerse perfectos nefrogramas sin pielograma a pesar de que el tiempo transcurrido desde la inyección corresponda al de esta última manifestación urográfica; solamente repitiedo durante largo tiempo (varias horas), la impresión sucesiva de placas radiográficas, se alcanza, aunque tardíamente, a observar tenues imágenes pielocalicilares. Al igual que en el nefrograma por hipofunción, se obtiene perfecto cistograma.

En algunos de estos pacientes, al prolongar la observación roentgenográfica se obtiene le imagen de la vesícula biliar contrastada, *reveladora de que el yodo, al no* encontrar fácil excreción por los elementos del nefrón, deriva su salida por la glándula hepática. Estos nefrogramas se producen por inhibición de la función del riñón de origen extra-renal y en estas condiciones, si bien una parte de yodo se acumula en las células del tubo proximal durante los primeros momentos de la inyección de contraste, allí queda, y sólo

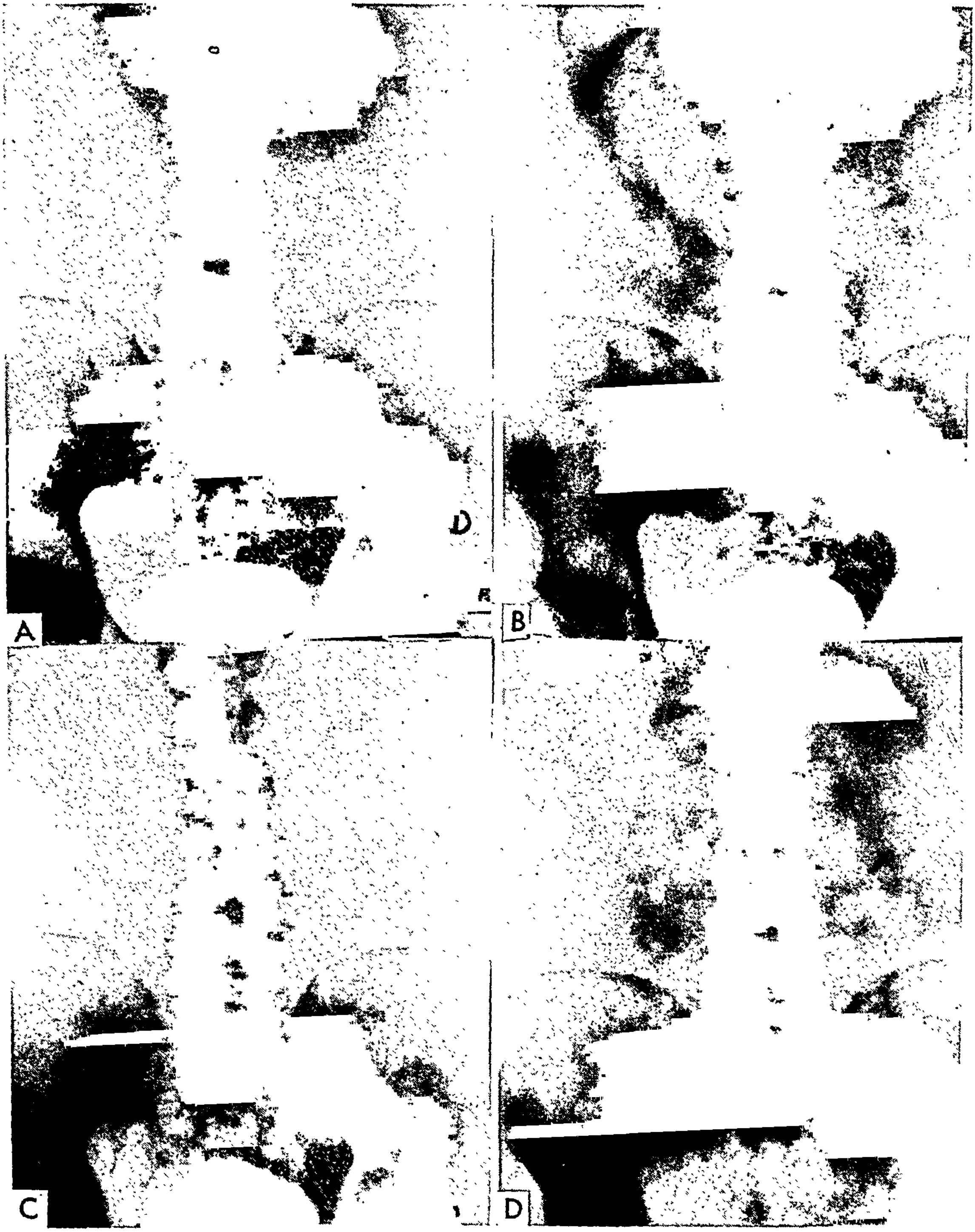

Fig. 4 (H.C. 27487).—*A*, nefropielograma a los 60 minutos. Imagen piélica destacada en el lado derecho; acúmulo de orina yodada en la vejiga; la T.A. Máx. ha remontado a 12. *B*, nefropielograma a los 85 minutos. Superpuesta a la sombra renal se observa la imagen del colecistograma. *C*, nefrograma bilateral a los 180 minutos, habiendo normalizado la T.A. Pielograma derecho al que se superpone la imagen de la vesícula biliar. *D*, nefropielograma bilateral a los 240 minutos. Superpuesta a la imagen pielo-renal derecha, la vesícula biliar de menor volumen, bien contrastada.

ficas con escaso contraste ya que una parte del yodo ha desaparecido de la sangre a través de la glándula hepática. En realidad estos pielogramas se deben al retardo en la excreción del yodo interrumpida por la inhibición funcional del riñón: acaso también en tales condiciones se produce en la célula una acumulación-límite de yodo y entonces a tenor de lo presupuesto por Bertil Josephson y Julia Kallas, cuando en la célula tubular el yodo alcanza el máximo de capacidad retentiva celular (Tm-y), el contraste se extravasa nuevamente a la corriente circulatoria y busca salida a través del hígado como se ha observado.

El tercer tipo de nefrograma por "retención," se produce cuando la emergencia natural de la orina a través del uréter queda súbitamente interrumpida coincidiendo en un riñón con parénquima normal. Tal modalidad de nefrograma ha sido frecuentemente observado y por ello motivo de atención más generalizada. Hace años Hans Hellmer, Boeminghaus y Wolff observaron este fenómeno y el último de estos autores describió la llamada "pielografía blanca, para expresar la ausencia de pielograma con la región piélica más destacada por el contraste del nefrograma, lo que atribuyó a que la *orina sin contraste* retenida en la pelvis y rodeada por la sombra del nefrograma, daba lugar a una lacuna más clara con respecto a la valoración del nefrograma, para quien tal imagen expresaba un estado deficitario del riñón cuando en *realidad debe ser interpretado en sentido* contrario, pues para que el fenómeno de la fijación del yodo en el riñón se produzca para proyectar nefrograma, requiere la integridad funcional de los elementos nobles de la glándula. Para algunos de los autores citados, la obtención del nefrograma durante las fases de obstrucción ureteral, se debe a un mecanismo de retención tubular de la orina, al punto que varios autores (Gouverneur, Hicker, Wesson, Weens, Florence, etc.) han intentado provocar el nefrograma mediante la hiperpresión por distensión piólica a través de un catéter ureteral.

Para Fey y Jeanbreau el dolor del cólico nefrítico desencadena el espasmo del anillo muscular peri-papilar de Henle, y tal mecanismo contribuye a la retención intraparenquimatosa tubular de la orina yodada, la cual contrasta el *riñón sin dar* pielograma.

En realidad cuando el cólico nefrítico por obstrucción, alcanza el ápice doloroso que interrumpe la función excretora del riñón, previamente se ha producido la distensión máxima de la cavidad pielo-calicilar, tal como se revela en pielogramas tardíos al prolongar la exploración de tales pacientes. Precisamente como mecanismo de [illegible]

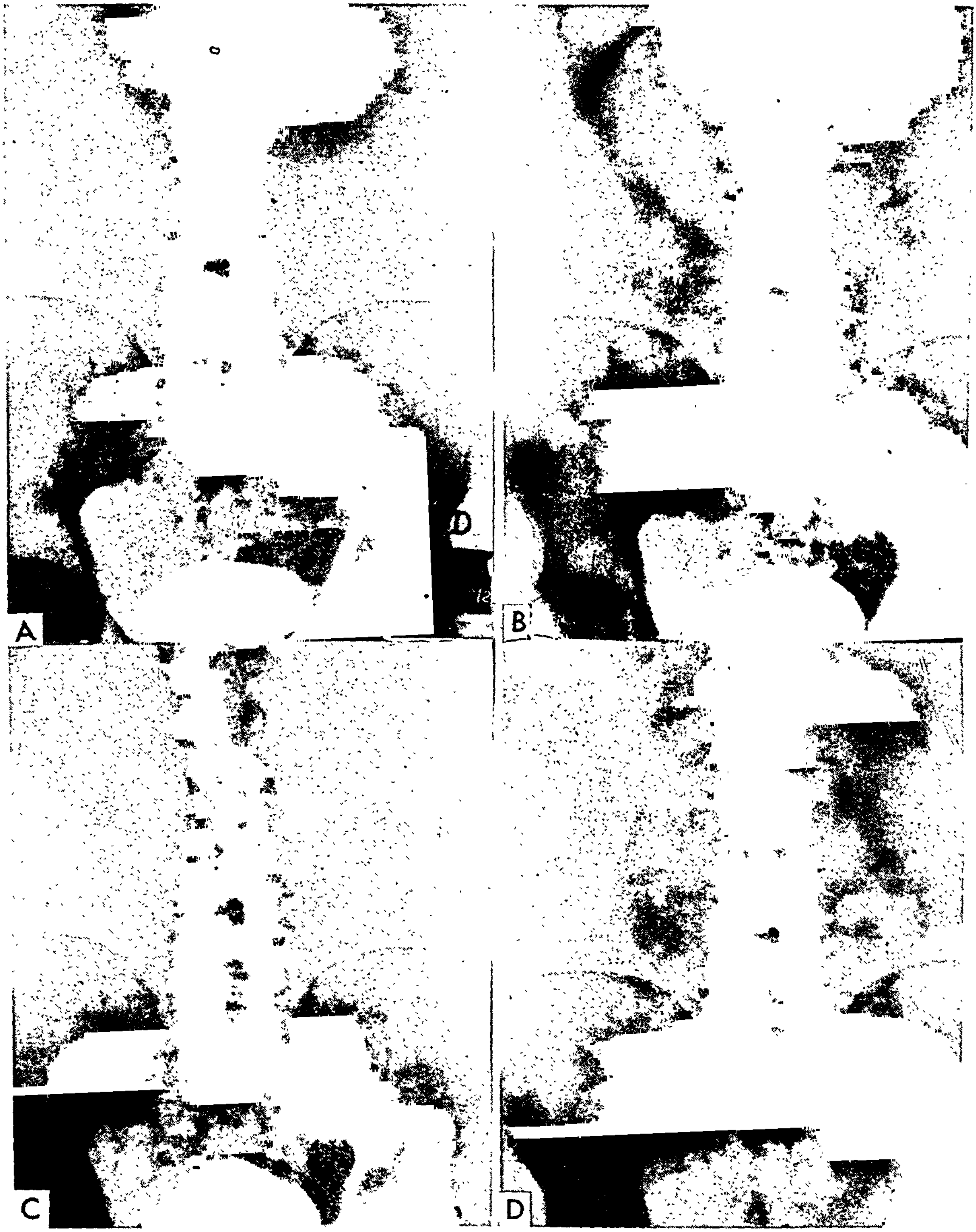

Fig. 4 (H.C. 27487).—*A*, nefropielograma a los 60 minutos. Imagen piélica destacada en el lado derecho; acúmulo de orina yodada en la vejiga; la T.A. Máx. ha remontado a 12. *B*, nefropielograma a los 85 minutos. Superpuesta a la sombra renal se observa la imagen del colecistograma. *C*, nefrograma bilateral a los 180 minutos, habiendo normalizado la T.A. Pielograma derecho al que se superpone la imagen de la vesícula biliar. *D*, nefropielograma bilateral a los 240 minutos. Superpuesta a la imagen pielo-renal derecha, la vesícula biliar de menor volumen, bien contrastada.

ficas con escaso contraste ya que una parte del yodo ha desaparecido de la sangre a través de la glándula hepática. En realidad estos pielogramas se deben al retardo en la excreción del yodo interrumpida por la inhibición funcional del riñón; acaso también en tales condiciones se produce en la célula una acumulación-límite de yodo y entonces a tenor de lo presupuesto por Bertil Josephson y Julia Kallas, cuando en la célula tubular el yodo alcanza el máximo de capacidad retentiva celular (Tm-y), el contraste se extravasa nuevamente a la corriente circulatoria y busca salida a través del hígado como se ha observado.

El tercer tipo de nefrograma por "retención," se produce cuando la emergencia natural de la orina a través del uréter queda súbitamente interrumpida coincidiendo en un riñón con parénquima normal. Tal modalidad de nefrograma ha sido frecuentemente observado y por ello motivo de atención más generalizada. Hace años Hans Hellmer, Boeminghaus y Wolff observaron este fenómeno y el último de estos autores describió la llamada "pielografía blanca, para expresar la ausencia de pielograma con la región piélica más destacada por el contraste del nefrograma, lo que atribuyó a que la orina sin contraste retenida en la pelvis y rodeada por

con respecto a la valoración del nefrograma, para quien tal imagen expresaba un estado deficitario del riñón cuando en realidad debe ser interpretado en sentido contrario. pues para que el fenómeno de la fijación del yodo en el riñón se produzca para proyectar nefrograma, requiere la integridad funcional de los elementos nobles de la glándula. Para algunos de los autores citados, la obtención del nefrograma durante las fases de obstrucción ureteral, se debe a un mecanismo de retención tubular de la orina, al punto que varios autores (Gouverneur. Hicker. Wesson. Weens. Florence. etc.) han intentado provocar el nefrograma mediante la hiperpresión por distensión piólica a través de un catéter ureteral.

Para Fey y Jeanbreau el dolor del cólico nefrítico desencadena el espasmo del anillo muscular peri-papilar de Henle. y tal mecanismo contribuye a la retención intraparenquimatosa tubular de la orina yodada. la cual contrasta el riñón sin dar pielograma.

En realidad cuando el cólico nefrítico por obstrucción. alcanza el ápice doloroso que interrumpe la función excretora del riñón. previamente se ha producido la distensión máxima de la cavidad pielo-calicilar. tal como se revela en pielogramas tardíos al prolongar la exploración de tal riñón se produce el nefrograma, el otro, abierto a la excreción yódica, si bien proyecta intenso pielograma, no consigue la eliminación de la totalidad del contraste cuya parte alícuota de yodo retiene el riñón obstruído.

El nefrograma unilateral por retención, plantea muchos problemas etiopatogénicos, pero a su vez permite establecer hipótesis más convincentes, las cuales, probablemente facilitarán el camino para el esclarecimiento de la retención renal del yodo como base fundamental del nefrograma para su empleo diagnóstico.

Se presupone que ciertas substancias yodadas (Diodrast, etc.) despuós de inyectadas en la sangre producen su mayor acumulación en el riñón y en mucha menor cantidad en el hígado, al punto que cuando se inyectan dosis por debajo que de los 4 mgrs. por kilogramo de peso, la acumulación renal que de tal substancia se produce, es superior a la que en encuentra en el plasma que ha recibido la droga. De ello se deduce que la absorción del yodo por el riñón debe ser un fenómeno vital dependiente de su actividad celular, la cual después de haber recibido y fijado el yodo en su intimidad histiocitaria, pasa a excretarlo, lo que pone de manifiesto que la actividad de los elementos celulares del riñón es doble, primeramente la fijación del yodo, y a continuación la excreción.

De ello se deduce que este supuesto fenómeno de actividad celular péxica, requiere un tiempo que por su brevedad, normalmente escapa a nuestra observación habitual, pero que en condiciones patológicas el fenómeno se prolonga, dando motivo a la obtención de nefrograma por la fijación del yodo en el propio riñón retardando la obtención del pielograma.

Esta supuesta función celular que por sus características debe ser localizada entre los elementos del tubo proximal, debe ser comparada al fenómeno de la atrocitosis tubular, descrito por Gerard y Cordier en las células de los tubos renales a incluso en las células de los hipernefromas, fenómeno que se asemeja a lo observado por Heinderneim en los bastones mitocondriales que transportan el carmín

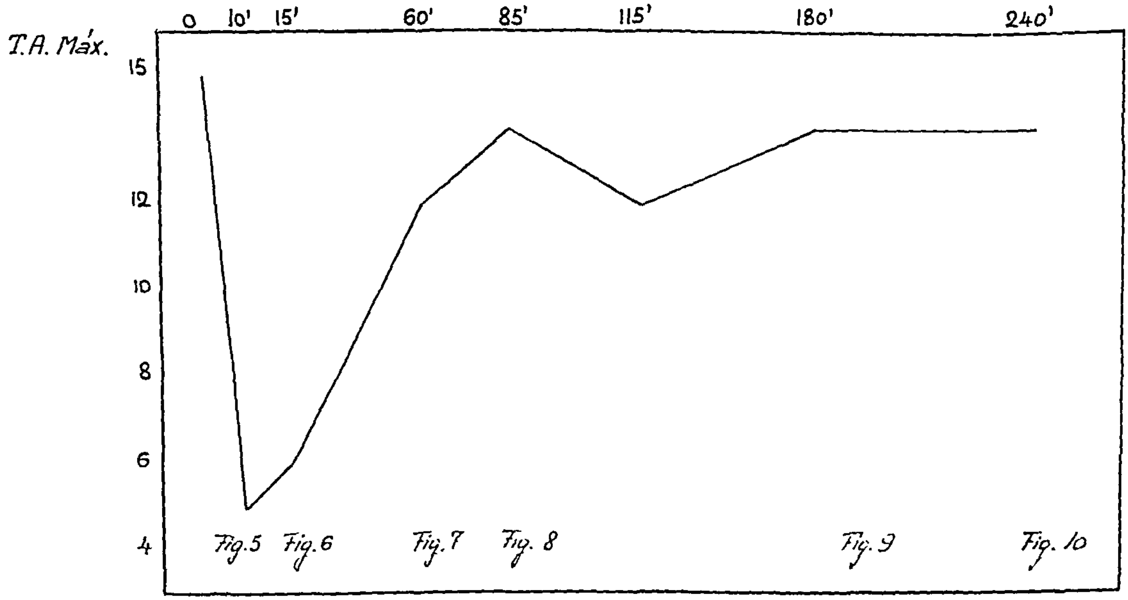

Fig. 5.

de índigo desde la basal celular al extremo apical ciliar para su excreción en el tubo urinífero. En el caso concreto del yodo, se puede atribuir la misión transportadora de éste a través de la célula tubular, a los mitrocondrios de Heinderneim, si bien otros autores opinan que se ocupan de tal transporte enzimas específicos para tal fín, los cuales cargan con la droga y siguen semejante recorrido intra-celular.

Cómo transita el yodo por el riñón hasta su eliminación por la orina, constituye un complejo problema cuyo esclarecimiento dará mucha luz, no solamente a la patoligía del riñón, sino también a su fisiología.

Si presumimos que del yodo orgánico inyectado en la sangre en su tránsito renal, una pequeña parte es filtrada por el glomérulo, pero la mayor cantidad es eliminada por el tubo contorneado proximal, nos interesa sobremanera conocer en qué condiciones normales se produce el fenómeno y especialmente en cuanto tiempo la droga transita por los elementos tubulares, y de ello alcanzar a averiguar los medios para que este tránsito pueda ser regulado artificiosamente hasta el punto de poder obtener, a nuestra voluntad, la imagen radiográfica del riñon impregnado o saturado por el contraste yodado.

transcurrido por el riñón, habrá desaparecido de tal vehículo la totalidad de yodo que al riñón le ha sido posible fijar: éste a su vez, con el fín de continuar su función y tomar de la sangre el resto del yodo circulante, comienza inmediatamente la excreción y dejar lugar para la fijación de nuevas masas de la droga sin llegar a la acumulación patológica.

Así merced a tan rápido mecanismo de fijación y excreción, ambos fenómenos al simultanearse se superponen, no siendo fácil su discriminación y con ello la aparición del yodo en las vías urinarias es inmediata y continuada sin dar lugar a la acumulación renal (nefrograma) y su visualización se produce al alcanzar las vías urinarias dependiente de la acumulación de la orina (rentención pielo-ureteral).

Al distanciarse los fenómenos de fijación y excreción renal es posible le visualización renal y sólo prolongando la observación se obtiene el pielograma, pero en lugar de observar este último durante el ápice normal de la excreción renal (entre los 30 y 60 mits.), sólo se obtiene nefrograma por la acumulación yódica celular y el pielograma se vislumbra más tardiamente, a medida que el fenómeno de excreción tubular se produce.

En condiciones patológicas, este periodo de excreción del yodo se prolonga y como

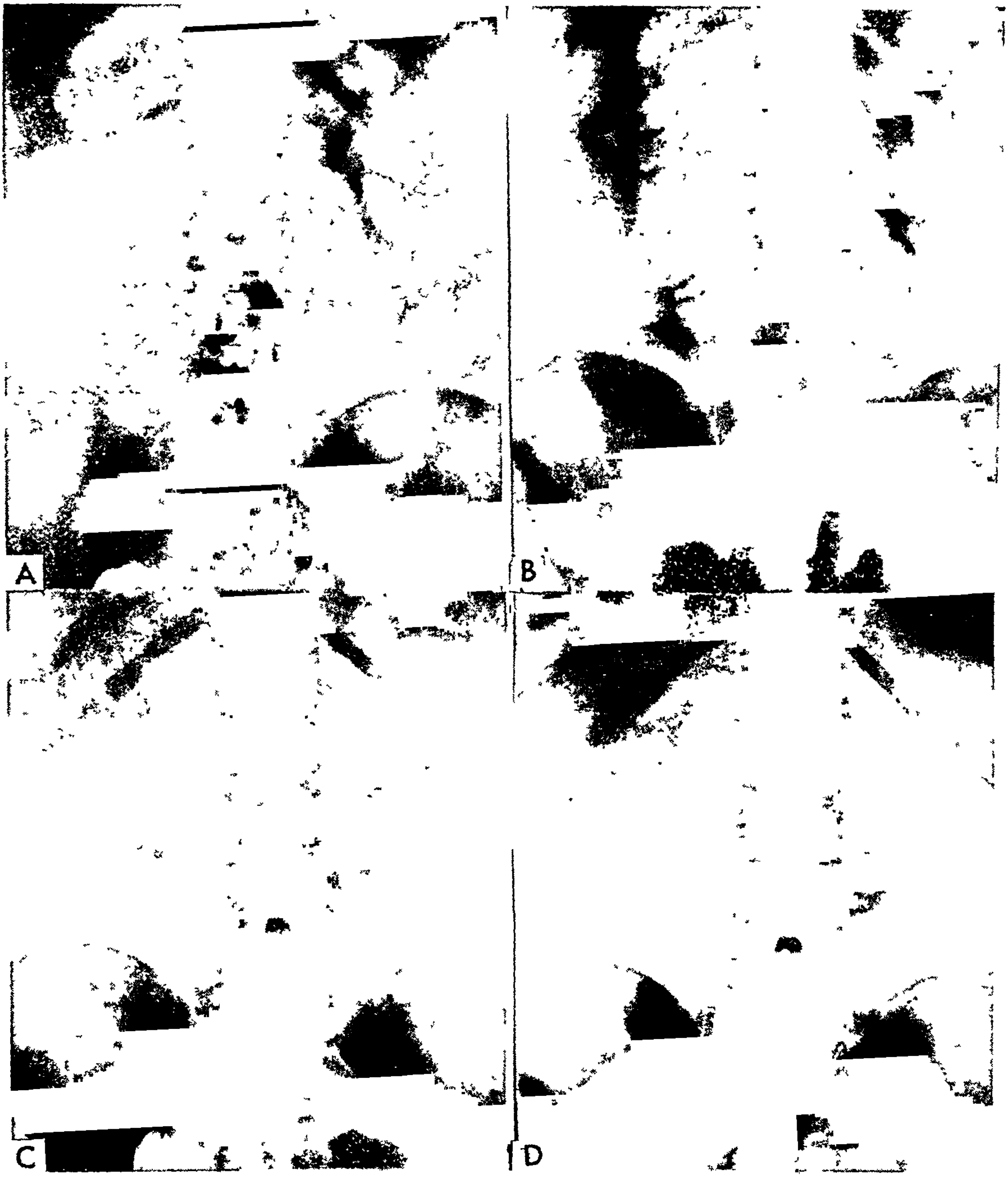

Fig. 6 (H.C. 19854).—*A*, pielograma derecho normal; cistograma nítido y cálculo en uréter terminal izquierdo que obstruye el conducto. Silencio funcional del riñón izdo.; el nefrograma está enmascarado por aereocolia. *B*, pielograma izquierdo a las 32 horas de la inyección del contraste, finalizada la excreción yodada por el R. derecho. *C*, nefropielograma a las 84 horas de la inyección del contraste. Imagen más destacada merced a la desaparición de la aereocolia. *D*, nefropielograma a las 96 horas de la inyección del contraste. Cálculo en uréter terminal izquierdo y cálculo pielocalicilar derecho.

citario se le califica de "mudo" o "silencioso." En muchos casos al prolongar la observación urográfica durante horas, e incluso días, después de la inyección del contraste, se alcanza a visualizar las vías urinarias de dicho riñón "mudo" o "silencioso" en un tiempo posterior al riñon sano, coincidiendo además este fenómeno de retardo con la observación de nefrograma más destacado en riñón deficitario que en el riñón opuesto sano.

Sabido es que cuando uno de los dos riñones está profundamente afectado o anulado, el yodo circulante es totalmente eliminado por el riñón sano en un tiempo prácticamente habitual a semejanza de lo que acontece en el riñón único; pero cuando el riñón afectado que plantea el problema a esclarecer, tiene su función retardada o temporalmente inhibida, entonces se observan los fenómenos señalados que aceptando el concepto del simple tránsito tubular del yodo son de difícil explicación.

Veamos qué ocurre e intentemos explicar el hecho tan evidente observado de la eliminación tardía del yodo. En pacientes con un riñón normal y el otro obstaculizado mecánicamente por bloqueo ureteral, el pielograma se produce con toda normalidad por el primero y en el tiempo habitual la imagen pielo-ureteral crece y decrece

proximal, las cuales dán salida al yodo circulante en la sangre conducido. ¿por una enzima?; cuando tal función no es posible por uno de los dos riñones carente de la suficiente permeabilidad glomerular y tubular, esta masa yódica rechazada por el riñón patológico sigue en la sangre e inmediatamente al nuevo tránsito de ésta con su carga yódica por el riñón opuesto—el sano—, éste compensa la deficiencia del enfermo tomando de la sangre la totalidad restante de substancia yodada para su inmediata excreción tubular; por tanto, según esta interpretación, no sería posible el nefrograma del riñón deficitario y tampoco el pielograma tardío, pues todo el yodo circulante debería haber sido eliminado por el riñón sano en función compensadora vicariante del deficitario.

¿Dónde se acantona pues el yodo, para que, habiendo finalizado el riñón sano su eliminación habitual, aparezca más tarde la imagen pielo-ureteral del opuesto? ¿Dónde quedó retenido el yodo que en su momento oportuno, no pudo traspasar la barrera glomérulo-tubular y pasar con la orina a las vías excretoras, ni tampoco ser recogido por la sangre para su traslado al riñón opuesto funcionante para su inmediata eliminación por éste?

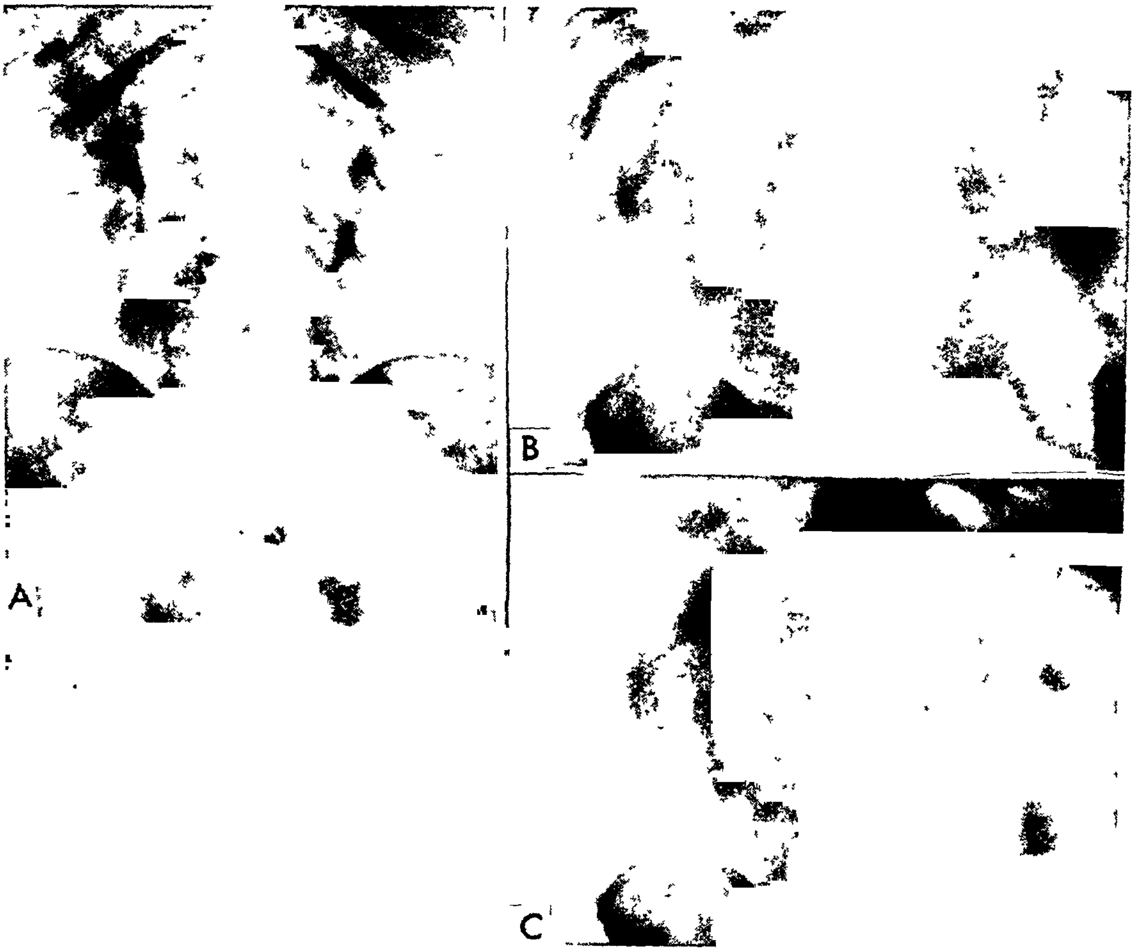

Fig. 7 (H.C. 19854).—*A*, nefropielograma bilateral a los 12 minutos, restablecido el enfermo después de la expulsión del cálculo ureteral izdo. *B*, nefropielograma izquierdo a las 6 horas de la inyección del contraste, habiendo finalizado la excreción yodada por el R. derecho. *C*, nefropielograma izquierdo a las 10 horas y media de la inyección del contraste, habiendo finalizado la excreción yodada por el *R.* derecho.

por el hígado; así no habría lugar a la excreción tardía por el riñón deficitario que presenta nefrograma retentivo, pues el riñón sano eliminaría de la sangre todo el yodo sin dar lugar a que se observasen signos tardíos de eliminación de contraste en las vías proyectando pielograma el riñón deficitario.

Para Narath, el almacenamiento yódico puede ser intratubular e incluso intracelular. En el primer supuesto la retención intratubular del yodo tendría menor interés, pues el contraste en la luz tubular traspasaría el umbral renal parenquimatoso y se situaría en las vías urinarias; además la masa yódica intratubular sería prontamente diluída por la orina, no siendo posible la persistencia prolongada del pielograma y sólo podría dar lugar al nefrograma.

Según el *supuesto de Smith, de la acumulación* intersticial, el yodo se comportaría a semejanza de cuando se provoca el bloqueo tubular renal por "competición" para impedir la rápida eliminación por el tubo renal de los antibióticos circulantes en la sangre, con lo cual estas drogas persisten en el organismo por un mayor tiempo, prolongando su acción terapéutica, merced a su lenta eliminación por el riñón. Este mecanismo de competición o de bloqueo del trabajo excretor tubular por otra substancia, no es aceptable para explicar la retención renal del yodo, pues en el supuesto de que el fenómeno de competición se produzca sólo en el riñón enfermo, el yodo, al continuar circulante en la sangre, sería excretado por el riñón opuesto sano y no habría lugar a excreción tardía por el órgano enfermo, tal como ha sido observado. Además tal fenómeno ha sido ya provocado experimentalmente mediante la carinamida, con la particularidad, que inyectando el yodo después de aquélla, el contraste no entra en la célula tubular, y si la administración se invierte dando tiempo a que el yodo se acumule en la célula renal, la subsiguiente administración de carcinamida frena la excreción y el yodo renal no pasa a la orina, como ha sido observado por Josephson y Kallas.

A. Engström y B. Josephson, estudiaron mediante histo-radiografía directa de cortes micrométricos de riñón de conejo, la localización histocítica del Diodrast previamente inyectado por vía venosa; pudieron observar en las histo-radiografías que el yodo se acumula de preferencia y en cantidad máxima en las células tubulares, y con gran diferencia en menos, en los glomérulos, como puede apreciarse en las nefrón y comprobaron que el yodo se encontraba en mayor cantidad en las células tubulares en función de la dosis inyectada y del acúmulo, éste último dependiente del transporte tubular máximo.

La marcada preferencia del yodo para la célula tubular, que tan destacadamente se revela en estas histo-radiografías, así como la retención celular que la prueba de competición mediante la prueba de carinamida, han observado Josephson y Kallas, constituye el punto central de la cuestión a estudiar, y de este tránsito celular depende la eliminación retardada del yodo previamente supeditada a una acción inicial y fundamental de fijación de éste por las células del tubo proximal hasta alcanzar la acumulación máxima, que acaso puede corresponder a la carga tubular o fijación celular máxima en función de tiempo.

En diferentes P.D. se ha constatado que la eliminación renal del yodo sufre retardo, al punto que 48 horas después de la inyección del contraste, cuando los vestigios de excreción por un riñón han desaparecido, se obtiene pielograma por el riñón opuesto, que en el comienzo de la prueba, ha mostrado un nefrograma muy destacado exponente de la fijación previa del yodo en dicho riñón.

¿Cómo explicar esta lentitud o retardo en la excreción renal? Es indudable que si barrera tubular, sería excretado por el sano sin dar lugar al nefrograma del primero. *Si la eliminación por filtraje glomerular* de esta masa de yodo fuese cierta, que no lo es, la retención sería intra-tubular, es decir dentro de la vía de excreción, en cuyo caso cabría pensar en la posibilidad de un fenómeno de absorción semejante, aunque a la inversa topográfica, al de competición, pues una parte muy importante del yodo retenido sería reabsorbido en las vías obstruídas y trasladado por la sangre al riñón opuesto para su eliminación, según ha demostrado Boeminghaus. De ello deducimos, que tanto en el espacio intersticial inter-tubular, como en la propia luz tubular, el yodo no puede permanecer estacionado por mucho tiempo, pues la corriente circulatoria procedería a su traslado para ser eliminado del organismo a través del riñón opuesto permeable. Por otra parte los experimentos citados por Josephson y Kallas confirman el aserto en otro sentido.

En observaciones clínicas urográficas, finalizada la eliminación del contraste por el riñón sano la excreción por el enfermo se retarda apareciendo el pielograma horas e incluso días después de desaparecido el pielograma del riñón sano. Si fuese cierto que el contraste quedase retenido en las vías (canaliculares y cálices) al producirse la reabsorción local demostrada por Boeminghaus, la imagen pielo-renal tardía del riñón enfermo no se produciría. Descartado el fenómeno de la competición tubular, la retención o acantonamiento del yodo débese buscar en un lugar de permanencia prolongada, entre la luz y el intersticio tubular y que sólo puede ser la propia célula del tubo urinífero que fija el yodo, por la cual transita y es excretado con la orina.

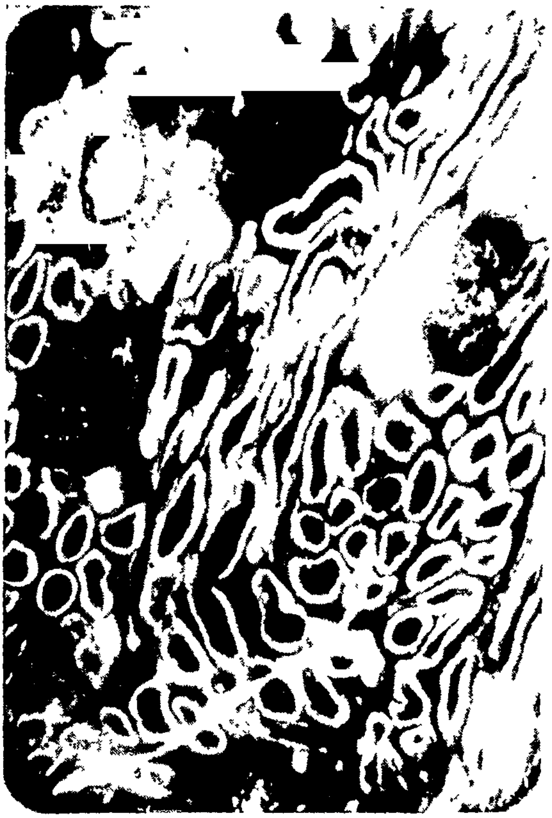

Fig. 8.—Celulas tubulares radio-opacas por absorción del Diodrast en franco contraste con la menor opacidad del ovillo glomerular. Ausencia del contraste en la luz tubular. (Micro-histo-radiografías cedidas por B. Josephson.)

Si aceptamos por exclusión que el yodo no se acantona en un depósito accidental, sino que la célula tubular lo absorbe de la sangre y fija para su excreción secundaria, se trata de un fenómeno de trabajo activo celular que en condiciones normales se produce con tal rapidez que con los medios actuales no podemos constatar con exactitud, pero que en ciertas condiciones patológicas en que la función celular se retrasa o realiza con lentitud, este supuesto fenómeno de "Yodopexia celular" del riñón al prolongarse, hace apreciable el nefrograma y se confirma con la tardía aparición del pielograma, cuando por el riñón opuesto la excreción celular normal ya cesó. De ello se deduce el fenómeno de "Yodopexia celular" exponente de una actividad de la célula tubular que presuponemos a la luz de las observaciones urográficas.

Nuestros conocimientos actuales acerca la función normal renal, los deducimos de la presencia o ausencia de la imagen proyectada por el molde pielo-calicilar, por la absorción de las Rayos X, dependiente de la concentración yódica y por las modificaciones morfológicas de la imagen, quedando nuestra fuente informativa limitada por la barrera constituída por el área cribosa papilar que se intepone entre las cavidades colectoras de la orina y el parénquima. Todo cuanto por detrás de esta barrera acontece durante la excreción del yodo inyectado con fines diagnóstico, es poco conocido y nuestras presunciones las deducimos de las modificaciones pielo-calicilares que constituyen el espejo en el que se reflejan las alteraciones renales.

Nuestro empeño debe ser orientado como primer paso en el esclarecimiento del mecanismo de fijación y excreción del yodo por el riñón, tanto en estado normal como en condiciones patológicas minimas, en que la función está temporalmente alterada y no se encuentra suficientemente modificada o inhibida que imposibilite la eliminación del contraste yódico y la lentitud funcional propia del órgano enfermo facilita la percepción de intimos fenómenos renales imposibles de apreciar en condiciones normales por su rápidez, con los actuales medios de investigación.

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◆

Water from snow and ice is always harmful because, once it has been frozen, it never regains its previous quality. The light, sweet and sparkling part of it is separated and vanishes leaving only the muddiest and heaviest part. You may prove this, if you wish, by measuring some water into a jar and then leaving it out in the open air on a winter's night in the coldest spot you can find. Next morning bring it back into the warmth again and, when it has thawed, measure it a second time. You will find the quantity considerably less. This shows that in the process of freezing, the lightest and finest part has been dried up and lost, for the heaviest and densest part could not disappear thus. For this reason I consider such water to be the most harmful for all purposes.

—*Hippocrates*

Indicaciones Actuales de la Canalizacion en la Colecistectomia

(Indications for Drainage in Cholecystectomy)

FRANCISCO FONSECA, M.D., F.I.C.S. (Hon.)

MEXICO D. F., MEXICO

DESDE el año de 1866 en que Courvoisier hizo la primera colecistectomia subserosa y suturó el abdomen sin dejar canalización se sucitó el problema de las indicaciones de ésta en la colecistectomia. Han transcurrido casi noventa años y todavia hoy en 1958 continúa sin resolverse definitivamente ésta situación quirúrgica. Es por esto que decidi traer ante ustedes mi experiencia personal en los últimos años para contribuir con éste pequeño esfuerzo a resolver una situación que en mi concepto debe quedar establecida definitivamente. Mi deseo es que discutiéndose esto en el seno de éste XI Congreso Internacional de Cirujanos se llegue a una conclusión precisa y quizas definitiva.

The indications for drainage after cholecystectomy are discussed and the arguments against it analyzed. The author maintains that if the operative technic is adequate (satisfactory ligature of the cystic duct and the cystic artery and care in the handling of hepatic tissue), and if gelfoam is used to cover the gallbladder bed and the pedicles, drainage is unnecessary. In his experience cholecystectomy without drainage has prevented a great many undesirable postoperative sequelae. His opinion is based on the results of 193 cholecystectomies with drainage, per-

El *célebre cirujano Italiano Profesor* Donati en ese mismo Congreso se declara partidario de ésta misma técnica y concluye que el éxito depende de una técnica operatoria precisa y metódica y presenta una serie de veintisiete casos operados con excelentes resultados.

El método sigue siendo aceptado y a la lista de Cirujanos que lo practican se agregan los nombre de Chiasserini, Alessandri, Babbini, Giulani, Gullotta y Leo en Italia.

Entonces surge el eminente Cirujano Pribam que practica la carbonización de la mucosa de la vesicula biliar cuando no puede practicar la colecistectomia subserosa y cierra el abdomen sin canalización.

Posteriormente Thorek sustituye la carbonización por la electrocoagulación y sigue practicando la no canalización.

Ya entonces se comprende que no solamente pueden dejarse sin canalizar los casos en que la peritonización sea perfecta sino otros en que este requisito no pueda llenarse.

En 1933 Mirizzi publica su magnifica monografia sobre la colecistectomia subserosa sin canalización afirmando "que los progresos de la técnica aumentan el número de éxitos y facilitan la práctica del método, dando en una palabra mayor seguridad."

Prat en 1954 en su obra El Drenaje en Cirugia dice textualmente: "El anhelo y afan de los Cirujanos de perfeccionar la terapeútica quirúrgica de las vias biliares influyó para que se preocuparan de suprimir el drenaje, que a veces es necesario y a menudo indispensable, no deja de ser un factor de imperfección de la operación, que algunos catalogan como un elemento de la enfermedad operatoria o 'enfermedad del drenaje.' Es por eso que muchos cirujanos se preocuparon de suprimir el drenaje biliar y en primera linea figura Pribam en esta orientación y también Mirizzi . . . y más adelante continua: Es digno destacar que toda la Cirugia Mun*dial tiene* el deseo y la aspiración del progreso quirúrgico y la supresión del drenaje cuenta como una de las principales inquietudes y si no ha sido suprimido totalmente, ello se debe, como lo comprobamos ya, en el drenaje del hepatocolédoco, por el temor que tienen los Cirujanos de que al realizar un *perfeccionamiento técnico* se *haga* en perjuicio de la seguridad de la vida del paciente."

Los Cirujanos contrarios a estas ideas reprochaban al procedimiento 1° el peligro del coleperitoneo; 2° la infección y la peritonitis derivada de ello; 3° el hemoperitoneo.

El coleperitoneo puede presentarse por safadura o deslizamiento de la ligadura del cistico, por aumento de la tensión de los canales biliares.

Otras veces se produce, dicen estos autores, por necrosis del muñon del cistico, en el sitio de la ligadura, porque su vitalidad se disminuye por la pérdida de su envoltura célulo-peritoneal.

En otras ocasiones es la lesión de un conducto biliar accesorio que en forma anómala puede presentarse en el lecho hepático de la vesicula y no ser reconocido como tal.

El coleperitoneo también podria presentarse *por goteo biliar por lesión del parenquima* hepático cuando no se respeta la lámina célulo-fibrosa que separa la vesícula del tejido hepático.

También puede producirse por herida de las vias biliares extrahepáticas en el momento de la disección del pedículo.

El segundo inconveniente señalado por los autores contrarios a la colecistectomia sin canalización es la infección que se produce cuando en el curso de la intervención se vierte el contenido de la vesicula infectada en el peritoneo lo que podriá traer posteriormente una peritonitis.

Finalmente se habla también del hemoperitoneo debido a la safadura de la ligadura del muñon de la arteria cistica o a hemorragia del tejido hepático del lecho vesicular.

Analisando estos inconvenientes veremos que es necesario que los Cirujanos que actuen sobre vias biliares esten lo suficientemente entrenados para evitar los y entonces en muy contadas ocasiones se verán precisados a utilizar la canalización después de la colecistectomia.

La colecistectomia sin drenaje ofrece muchas ventajas que nos hacen fervientes partidarios de ella y desear que cada dia se generalise más esta técnica en beneficio de los enfermos.

Como dice Mirizzi "una de las esperanzas puestas en la colecistectomia sin drenaje ha sido la supresión, la limitación de las adherencias o al menos si su formación es inevitable, su incapacidad de producir dolores y trastornos mecánicos."

Davis afirma que las adherencias postoperatorias gozan un papel importante en las secuelas de la colecistectomia y según él la causa de su producción es el drenaje sub-hepático y la hemostasia imperfecta.

Mirizzi cree que esta afirmación es excesiva pues existen otras causas productoras de secuelas, pero esta de acuerdo en que en la colecistectomia con canalización se producen a no dudarlo más adherencias.

Desmarest dice que las adherencias asi

colecistectomia con canalización, las oclusiones que la siguen son raras, sin embargo los hechos confirman que a pesar de esta baja frecuencia, la canalización influye sin lugar a duda en la producción de estas. Todos estos hechos son los que hacen afirmar a Mirizzi que la colecistectomia ideal, como él la llama, no evita de una manera absoluta la formación de adherencias pero la limita grandemente sobre todo en los predispuestos.

Otra de las ventajas del procedimiento es el evitar las hemorragias postoperatorias que se producen en el momento de retirar la canalización pues es bien sabido que la mayor parte de estos enfermos son insuficientes hepáticos y predispuestos a las hemorragias. Estas pérdidas sanguineas algunas veces pueden ser bastante abundantes, incluso para poner en peligro la vida del enfermo y necesitar transfusión sanguinea de urgencia, y en algunas ocasiones incluso, una segunda intervención al no poder controlar la hemorragia por el orificio de la canalización.

Esto es particularmente importante cuando el cirujano sabe previamente de esta insuficiencia o existe una ictericia reciente lo que hará comprender facilmente la utilidad que tiene la supresión de la canalización en estos enfermos; de ello resulta tomia sin drenaje.

Se puede decir en términos generales que la colecistectomia ideal o sin canalización está indicada en todos los casos en que la enfermedad litiásica se encuentra en su fase vesicular, de donde se deduce que es muy importante actuar con un diagnóstico preciso y con el conocimiento lo más exacto posible del estado de las vias biliares antes de la intervención. Actualmente se cuenta con medio de contraste extraordinarios como el biligrafin que pueden ayudar grandemente al conocimiento del estado fisico y funcional de las vias biliares antes de la intervención.

En resumen: Podemos afirmar que en el año de 1958 se deberá practicar la colecistectomia sin canalización en todos los casos, primero, en que la enfermedad litiásica se encuentre en su fase vesicular e incluimos en esto los casos de vesiculas escleroatróficas, de hidrocolecistos y de piocolecistos incluso con adherencias que hayan bloqueado el espacio subhepático.

Creemos que sin canalización se obtienen evoluciones más rápidas y satisfactorias, se evita el peligro de las hemorragias al retirar el drenaje y también las eventraciones y la mayor parte de las secuelas postoperatorias que son a no dudarlo debido a las adherencias.

En mi práctica personal en los últimos años he podido efectuar ciento noventa y tres colecistectomias sin canalización, con resultados satisfactorios, con evolución postoperatoria buena y con un porcentaje mínimo, no mayor de dos por ciento de secuelas postoperatorias dolorosas que han podido ser tratadas facilmente. En ninguno de los casos ha habido necesidad de reoperar lo que considero extraordinario al comparar con estadisticas de colecistectomias con canalización en que las secuelas postoperatorias graves llegan frecuentemente a un diez por ciento y en muchos casos obligan al cirujano a una segunda intervención.

En todos mis operados uso un empaque de Gelatina purificada (Gelfoam) para cubrir el lecho vesicular y el pediculo del cistico y de la arteria cistica y en todos he obtenido magnificos resultados sin tener un solo caso de coleperitoneo o de hemoperitoneo.

Los casos operados han sido de colecistitis crónicas calculosas, vesiculas escleroatróficas, hidrocolecistos y piocolecistos.

Posiblemente por el uso de los antibióticos en los últimos años no he tenido oportunidad de encontrar ni colecistitis *gangrenosas ni perforaciones* de la vesicula.

Estos enfermos han sido operados en el Hospital General, Pabellón 3 y Pabellón Gastón Melo, en el Hospital Frances y en la Central Quirúrgica de la Ciudad de México.

CONCLUSIONES

1. En este trabajo se hace historia en relación con las indicaciones de la canalización después de la colecistectomia.
2. Se analizan los argumentos en contra de la canalización sistemática después de la colecistectomia.
3. Se sostiene que cuando existe una buena técnica operatoria (ligadura satisfactoria del conducto cistico, de la arteria cistica y respeto al tejido glandular hepático) y se utiliza Gelfoam para cubrir el lecho hepático de la vesicula y los pedículos no es necesario canalizar después de la colecistectomia aún cuando se trate de casos de piocolecisto.
4. Se afirma que con la técnica de colecistectomia sin canalización se disminuye un gran porcentaje de secuelas postoperatorias.
5. Se fundamenta todo esto en el resultado de ciento noventa y tres colecistectomias sin canalización operadas en el Hospital General (Pabellón 3 y Pabellón Gaston Melo), Central Quirúrgica y Hospital Frances de México.

El Uso de la Sonda de Cattell en Cirugia Biliar

(Use of Cattell's Sound in Biliary Surgery)

FRANCISCO PUENTE PEREDA, M.D.

MEXICO D. F., MEXICO

CUANDO se abre el colédoco para extraer cálculos de su interior o simplemente para explorar el contenido de las vías biliares extrahepáticas, en vez de hacer la sutura directa de la brecha colédociana, se acostumbra canalizar temporalmente dicho canal mediante la colocación de una sonda en T con las ramas cortas dentro del canal y la rama larga hacia el exterior, por donde escurrira la bilis y por donde se puede hacer el control radiográfico de los canales mediante la inyección de una sustancia radiopaca.

La sonda usada para ese fin ha sido la de Kerr, cuya rama transversal mide 10 cm., y la longitudinal partiendo a 90° del centro de ésta, tiene una longitud aproximada de 35 cm. Esta sonda ha sido modificada por diversos autores para facilitar su empleo, dando diversos ángulos a la entrada de la porción vertical en la transversal, o como en el caso de la sonda ideada por Maingot, haciendo que la porción transversal de la sonda sea unicamente una canaladura, lo que facilita su extracción posterior.

Sin embargo, la sonda ideada por Cattell tiene una diferencia fundamental, que consiste en que las ramas transversales son tan largas como la rama vertical, y está ideada para que la porción superior de la rama intracanalicularque va a quedar en contacto con el conducto hepático se recorte a la longitud necesaria de acuerdo con el enfermo, y que la rama inferior que va a llegar hacia la porción distal del colédoco, atraviese el ámpula de Vater y entre al duodeno en una buena extensión.

The number of patients with postoperative complications following surgical treatment of the gallbladder and bile ducts increases every day. The commonest of these are recurrence of stones in the common duct, fibrosis of the ampulla of Vater, and traumatic stricture of the common duct.

To prevent these conditions the author recommends careful surgical handling, operative cholangiography, [illegible] of Vater's ampulla with [illegible] dilators up to No. [illegible] and the use of the long Cattell T-tube. All these procedures [illegible]

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Bakes como tiempo preliminar a su colacación, con lo que se hace una mejor cirugía de la región. Sus indicaciones especiales son:

Ictericia obstructiva.
Fibrosis o estenosis del esfinter de Oddi.
Cálculos residuales de colédoco.
Reconstrucción de vías biliares post-quirúrgica.

1. Ictericia Obstructiva.

En éstos casos, en los que frecuentemente se encuentra un cálculo enclavado en el ámpula de Vater, además de otro número variable de cálculos en el interior del colédoco y hepático, se practica la coledocostomía en la forma usual, se extraen los cálculos del interior de los canales con lapinza de cálculo, y si no es posible hacer la extracción final del cálculo enclavado a través de la brecha coledociana, se deberá abrir el duodeno en su segunda porción, para hacer a la vista la dilatación de la papila, la extracción del cálculo enclavado, si es necesario previa esfinterotomía, y finalmente dilatar con los dilatadores de Bakes el ámpula hasta obterner un calibre suficiente. Una vez que se ha obtenido la limpieza total del canal con suero y que se está seguro de que no queda ningún cálculo, se pasa la rama larga de la sonda de Cattell por la coledocostomía y se atraviesa por el ámpula de Vater hacia el interior del duodeno; se corta al tamaño la rama superior y se introduce en el hepático común y a continuación se sutura la brecha duodenal mediante sutura transversal en dos planos y se sutura la coledocostomía a los lados de la sonda con puntos totales, perpendiculares a la incisión.

Se ha visto que cuando se hacen maniobras bruscas para dilatar el esfinter de Oddi y el ámpula de Vater por estar poco permeables debido a edema inflamatorio, se presentan pequeñas hemorragias submucosas que posteriormente dejan una cicatríz que puede estenosar dicha región aún más que antes hacer la dilatación forzada. Por lo tanto el paso de la sonda de Cattell sirve de molde a la cicatrización, obligando a que la fibrosis deje un calibre suficiente para el escurrimiento correcto de la bilis al duodeno. Para obtener éste resultado, la sonda debe permanecer un tiempo largo en su sitio, actuando como mandrin del sitio traumatizado. Este tiempo puede ser de 6 a 12 meses y aún más tiempo si es necesario.

2. Fibrosis o estenosis del Oddi.

En todos los casos operados de vías biliares se debe tener principalmente cuidado en explorar la entrada del colédoco en el duodeno, para estar seguros de que esa zona es permeable, o de no serlo saber el grado de estrechamiento y si éste es reducible facilmente. Para ello se hace uso del juego graduado de dilatadores de Bakes en forma progresiva. Cuando la estenosis no permita elpaso de los dilatadores con facilidad, no hay que hacer maniobras bruscas innecesarias, pues existe el riesgo de producir una falsa vía en el colédoco perforante hacia cavidad abdominal, que puede producir graves complicaciones al enfermo. Cuando la dilatación no sea maniobra fácil se deberá abrir el duodeno para hacer la revisión visual del ámpula y la dilatación a la vista de la zona angustiada hasta obtener un calibre correcto, pasando como en el caso mencionado antes la rama larga de la sonda de Cattell a duodeno, y suturando las heridas duodenal y coledociana.

3. Cálculos residuales de colédoco.

Esta que es una de las complicaciones frecuentes en la cirugía de vías biliares, es sin duda la preocupación constante del cirujano cuando efectúa una colecistectomía, sobre todo en los casos en que se encuentran cálculo vesiculares pequeños y canal cístico dilatado.

Este tipo de complicaciones ha disminuido en nuestr práctica por dos causas principales:

a) empleo de la colangiografía operatoria, y

b) exploración sistemática del ámpula de Vater y dilatación amplia de la misma en los casos de coledocoliatisis, con empleo posterior de la *sonda* en T larga de Cattell.

Como en los casos anteriores, no hay que vacilar en practicar una duodenostomía si existe duda repecto al estado de permeabilidad de la papila Vateriana. Más vale hacer una operación un poco más amplia que tener que reoperar al enfermo para extraer un cálculo residual. Desde luego, usando la colangiografía operatoria, se debe hacer una placa de control con sustancia de contraste después de colocada la sonda en T para revisión final.

4. Reconstrucción de vías biliares. Estenosis traumática de colédoco.

Esta es sin duda una de las indicaciones precisas del empleo de la sonda de Cattell, principalmente cuando se hace una reconstrucción directa del canal estenosado mediante anastomosis termino-terminal, pues en ese caso la sonda garantiza la protección de la sutura tanto por la falta de tensión dentro del canal al forzar la bilis al duodeno como por servir de molde para la cicatrización. En éste caso deberá estar en su sitio un mínimo de 12 meses.

Para el manejo de la *sonda* de Cattell hay que recordar que la porción intraduodenal puede taparse con facilidad por estar en contacto con el paso de los alimentos, por lo que en los casos de estadía prolongada de la sonda es necesaria la irrigación frecuente de la misma para evitar que se tape, pues entonces su efecto podría ser contraproducente.

Las placas de control posoperatorio se hacen a través de ésta sonda igual que con cualquier otra sonda en T y su extracción no ofrece mayores dificultades que las que se presentan para extraer una sonda de rama corta.

CONCLUSIONES

Cada día es mayor el número de enfermos operados de litiasis vesicular que presentan posteriormente trastornos, debidos ya sea a litiasis residual del colédoco, a fibrosis del ámpula de Vater, o a estenosis traumática del colédoco.

Para evitar estos trastornos tan serios para el enfermo se recomienda: cirugía cuidadosa, colangiografía operatoria, dilatación sistemática del ámpula de Vater y el empleo de la sonda en T larga de Cattell.

Llevando a cabo los postulados enunciados antes, vemos como disminuye el llamado síndrome post-colecistectomia

five or six lectures on anatomy were then given each night in London during the winter session. Cecil Wall has noted that "in this year William Hunter took over Samuel Sharpe's lectures to the Society of Naval Surgeons and, by introducing the Parisian system of practical dissection, soon developed a flourishing school. It is said that in 1748 he had twenty pupils and in 1756 more than a hundred." This was the beginning of the famous Windmill Street School, with which we associate the names of the Hunter brothers and those of Hewson, Cruikshank, Abernethy, Cooper and Bell.

The Windmill Street School, though by far the best known of such establishments, was not alone in the work and did not open a new field of endeavor. J. F. South and Cecil Wall have traced the varying status of the anatomic lectures provided by the College itself, and while it must be admitted that the College did not in fact rival private enterprise in this regard, it did take official cognizance of the importance of anatomy and contribute, in early times somewhat falteringly, to what may be called the "basic science training" of the surgeon.

Samuel Sharpe, who has been mentioned as William Hunter's immediate predecessor in the teaching of anatomy, was one of the favorite pupils of the great William Cheselden, himself the author of anatomic works, one of which remained a popular text for many years. Osteology was Cheselden's special province, but he continues memorable for his surgical contributions to the practice of lithotomy and to ophthalmology. It was in ophthalmology that Sharpe particularly excelled.

In the course of the eighteenth century the strong anatomic tradition of British surgery became well established. Oxford had slumbered peacefully in undiminished respect for Hippocrates, Galen and Avicenna, but even Oxford underwent an anatomic awakening. Meantime the London schools of anatomy, most of which began in private hands but gradually became associated with the medical schools growing up around the great teaching hospitals, were rivaled in eminence by Edinburgh lecture theaters and laboratories.

One of the principal areas in which British advances in practical surgery were evident was the area explored by John Hunter in introducing his famous operation for popliteal aneurysm. It was not long before his pupils, Abernethy, Cooper and others, were successfully tying this major vessel and that, usually under emergency circumstances; the culmination of the trend was reached in Cooper's ligations of the abdominal portion of the aorta. In this, as in the other branches of surgery they practiced, the pupils of John Hunter went to work with great speed and assurance, fortified by a knowledge of anatomy probably much more extensive and exact, on the whole, than that of their present-day successors. As Cooper's works on the breast and on hernia suffice to indicate, they made themselves the masters of surgical anatomy in special areas with the object of performing good elective work too. But Cooper, the master surgeon-anatomist of his time, never neglected to keep fresh his acquaintance will all parts of the body, and it is said that he hardly passed a day without dissecting.

One of the striking features of the *De Motu Cordis* of William Harvey is the astonishingly large number of different species of animals his researches led him to dissect. England later developed a notable school of comparative anatomists, with John Hunter occupying the preeminent position. Hunter, like Cuvier after him, hoped that the comparative study of many classes of animals would lead to important results in physiology. He himself pursued other avenues of approach as well. His experimental work threw some light on various aspects of physiology and pathology, and he even made a beginning in the study of endocrinology. Unluckily, many of his disciples restricted themselves almost completely to morphologic researches, supplementing their work of this kind with much speculation in the vein of Hunter. Reinforced by the growing national sentiment of antivivisectionism, both within and without the profession, this resulted in a too exclusive reliance on anatomy.

"In the animal body," wrote Sir Charles Bell, "the parts present distinct textures, and are laid in a natural and perfect order; it is necessary only to trace the tubes, or to observe the symmetrical order of the nervous cords, that we may discover their respective uses; the motions, whether of the solid or fluid parts, are so regular and uniform, that the whole offers a subject for observation and induction. Anatomy is already looked upon with prejudice by the thoughtless and ignorant: let not its professors unnecessarily incur the censures of the humane. Experiments have never been the means of discovery; and a survey of what has been attempted of late years in physiology will prove that the opening of living animals has done more to perpetuate error than to confirm the just views taken from the study of anatomy and natural motions."

It is small wonder that anatomy, both human and comparative, long flourished in Great Britain at the expense of experimental investigation. It has formed one of the great strengths of British surgery, supplemented a little later by pathologic anatomy; at the same time, it has stood in the way of the development of physiology and, by the same token, that of physiologic surgery. Fortunately the strength of the tradition has survived the overthrow of the once unconquerable prejudice it brought in its train.

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New Books

BOOKS RECEIVED

The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Pathology and Surgery of the Veins of the Lower Limbs. By Harold Dodd and Frank Cockett. Baltimore: The Williams & Wilkins Company, 1957. Pp. 462, illustrated.

Spinal Cord Compression. By I. M. Tarlov. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 147, with 41 illustrations.

Functional Bracing of the Upper Extremities. By Miles H. Anderson. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 463. Illustrated.

The Clinical Management of Varicose Veins. By David Woolfolk Barrow. New York: Paul B. Hoeber, 1957. Pp. 167, with 70 illustrations.

Homosexuality, Transvestism and Change of Sex. By Eugene de Savitsch. London: William Heinemann Medical Books Ltd., 1958. Pp. 120.

Temporal Lobe Epilepsy. Edited by Maitland Baldwin and Pearce Bailey; Co-Editors, Cosiamo Ajmone-Marson, Igor Klatzo and Donald Tower. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 581. *Reviewed in this issue.*

The Management of Emergencies in Thoracic Surgery. By John Borrie. New York: Appleton-Century-Crofts, 1958. Pp. 340, with numerous illustrations. *Reviewed in this issue.*

The Physician's Own Library. By Mary Louise Marshall. Springfield, Ill.; Charles C Thomas, Publisher, 1957. Pp. 80.

Physical Examination of the Surgical Patient. By J. Englebert Dunthy and Thomas W. Botsford. Philadelphia: The W. B. Saunders Company, 1958. 2d ed. Pp. 375, with 203 illustrations. *Reviewed in this issue.*

On the Cerebrospinal Fluid in Normal Children and in Patients with Acute Abacterial Meningo-Encephalitis. By S. Widell. Lund, Sweden: Berlinyska Boktryckerict, 1958. Pp. 102, with 25 tables and 13 illustrations. *Reviewed in this issue.*

Obstetrics and Gynecologic Milestones: Essays in Eponymy. By Harold Speert. New York: The Macmillan Co., 1958. Pp. 700. *Reviewed in this issue.*

Lesions of the Lower Bowel. By Raymond J. Jackman. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 347, with endoscopic illustrations in color. *Reviewed in this issue.*

Medulloblastoma. By Benjamin L. Crue Jr. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 206, with 16 illustrations. *Reviewed in this issue.*

The Psychology of Medical Practice. By Marc H. Hollender. Philadelphia: The W. B. Saunders Company, 1958. Pp. 276. *Reviewed in this issue.*

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This investigation deals with the amount and composition of the cerebrospinal fluid protein in normal children of different ages. Studies were also made on cerebrospinal fluid from children and adults with acute abacterial meningoencephalitis in different stages of the disease, with particular attention to the connection between clinical symptoms and changes in the protein level of the cerebrospinal fluid. The cell count of the fluid was also studied systematically. The protein content was analyzed by electrophoresis, with determination of the X fraction, albumen, and Alpha$_1$, Alpha$_2$, Beta$_1$, Beta$_2$ and gamma fractions.

A total of 123 samples of cerebrospinal fluid from 98 normal children and 31 normal adults was studied. The cell count was observed to be high (0-15) during the first three months of life. The individual varia-

60 of the patients being children and 59 adults. Of the children, 33 had mumps meningoencephalitis and 27 other types. Only 15 adults had mumps meningoencephalitis, 44 had other types. A total of 256 samples of cerebrospinal fluid from these 119 patients were studied.

At onset of the disease the cell content of the cerebrospinal fluid was usually higher with mumps meningoencephalitis than with other forms. No relation between symptoms and changes in the cerebrospinal fluid was observed with mumps meningoencephalitis, but there was a clear correlation between the symptoms and these changes in other forms of meningoencephalitis. The changes consisted of a marked increase in cell count and protein content and a relative concentration of gamma globulin. It was concluded that the changes in the central nervous system associated with mumps meningoencephalitis are relatively benign and localized mainly to the meninges. Abnormalities in the protein content of the cerebrospinal fluid are considered due to disturbed meningeal permeability. No correlation was found between the

Nonprofit Corporations and Associations. By Howard L. Oleck. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1956. Pp. 460.

This guide to the formation, operation and dissolution of tax-exempt organizations gives pertinent advice on how to get maximum tax benefits, how to draw up bylaws, how to conduct meetings, etc. All types of nonprofit organizations are discussed—the school, the college, the hospital, the fraternal organization, the scholarship foundation, and so on. The book is of particular value to hospital administrators and men interested in professional organizations.

O. C.

Lesions of the Lower Bowel. By Raymond J. Jackman. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 347, with endoscopic illustrations in color.

The illustrations place this work in a class by itself. The color plates from proctoscopic photographs are the best I have seen, being sufficiently true to life to be useful as reference in proctoscopic examinations. Happily, they are numerous. The author's description of anorectal anatomy is well done, avoiding the overcomplicated and the diffiusely detailed. It is clear, simple, accurate and readily remembered. The monograph is based chiefly on the author's own experience in a large number of cases. Unlike much related writing, the work emphasizes diagnosis. Surgical therapy, however, is afforded adequate presentation.

Most anorectal operations are relatively simple, and a properly supervised resident can become reasonably proficient, if allowed a fair number of operations, in a year. This is not true of anorectal diagnosis; it is here that the surgeon without proctologic training errs. Years ago Dr. Collier F. Martin, long-time dean of Philadelphia proctologists, was firm in his opinion that two years' training in a proctologic service or clinic was imperative if he were to have consistently accurate diagnoses from postgraduate students on which he could depend at the operating table. Doctor Jackman's regard for the importance of diagnosis is well advised and praiseworthy.

Any physician interested in proctology would do well to have this book, and it should be available to all proctologic residents.

CLEMENT L. MARTIN, M.D.

The Psychology of Medical Practice. By Marc H. Hollender. Philadelphia: The W. B. Saunders Company, 1958. Pp. 276.

The author, who is professor and chairman of the Department of Psychiatry at the State University of New York and Director of the Syracuse (N.Y.) Psychiatric Hospital, maintains that, although the physical and psychic approaches to the patient are intertwined, they cannot be studied from the same point of view. The patient's emotional reaction to his illness and its treatment can determine the effectiveness of the therapy.

Dr. Hollender gives most of his attention to doctor-patient relations in medicine, surgery, obstetrics and pediatrics, as the broad fields in which the medical man works. The approaches he suggests in these general fields can be adapted, he suggests, to the various specialties.

Special chapters have been contributed by Dr. Leonard Stine, assistant professor of clinical medicine at the Chicago Medical School; Dr. Ernest M. Solomon, instructor in the Department of Obstetrics and Gynecology, Northwestern University Medical School (Chicago); and Dr. Julius B. Richmond, professor and chairman of the Department of Pediatrics, State University of New York

In the last two decades the psychiatrist, the psychoanalyst, the psychologist and the general practitioner have perforce assumed many of the functions once performed by the minister or priest. The doctor is everyone's "confessor." Psychiatric considerations, therefore, are a part of every medical man's daily practice. Dr. Hollender's suggestions as to the management of patients with medical problems, with carcinoma, impending operations, with loss of limbs, etc., as well as victims of postpartum psychoses, are down-to-earth and notable for their common sense. The book is recommended to all who undertake the healing art.

O. C.

An Introduction to the Study of Experinental Medicine. By Claude Bernard. Transated by Henry Copley Greene, with an introluction by Lawrence J. Henderson and a new *foreword* by I. Bernard Cohen. New York: Dover Publications, Inc., 1958. Pp. 226.

This new paper-bound edition is the only major work of Claude Bernard, the great French physiologist now available in English translation. First published in 1865, the text is still used in philosophy courses in France. It was first issued in English in 1927 and was reprinted in 1949. This new edition will find welcome readers everywhere as a medical classic which has not become passé.

M. T.

The Management of Emergencies in Thoracic Surgery. By John Borrie. New York: Appleton-Century-Crofts, 1958. Pp. 340, with numerous illustrations.

Although this book deals with a so-called specialty, it is written for those who see the patient first, be it a general practitioner or intern or a nurse. Mr. Borrie is to be complimented on an excellent format and a concise, pithy presentation of his subject. He has discussed all types of thoracic emergencies, from endobronchial foreign bodies to cardiac arrest, with aids to diagnosis and methods of treatment. Many roentgenograms have been reproduced to depict specific conditions.

This book can be recommended to surgeons, general practitioners, house physicians and [illegible]

documented: the bibliography contains 401 references.

In the author's opinion, about 200 cases of medulloblastoma occur each year in the United States. In at least three-fourths of these the patients are children under 15 years of age. The incidence in the male is twice that observed in the female. The symptoms of this tumor are mainly those of increased intracranial pressure plus, perhaps, the syndrome of the cerebellar vermis, with ataxia most marked on standing. The usual therapeutic approach is surgical exploration: verification of the lesion by biopsy: decompression, and irradiation of the tumor site and the entire neural axis. Although the average survival period is less than a year, a few cases of surprisingly long survival have been reported. The patients have generally been elderly, which raises the possibility of misdiagnosis, a slower growing type of medulloblastoma or of "maturation" of the tumor. The last-mentioned might conceivably be induced by irradiation.

This monograph presents a thorough review of the available literature on an important group of intracranial tumors and will be of interest to neurosurgeons, neurologists, pediatricians and pathologists.

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Obstetrics and Gynecologic Milestones: Essays in Eponymy. By Harold Speert. New York: The Macmillan Co., 1958. Pp. 700.

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Approximately 90 per cent of all pregnancies result in the birth of normal, healthy infants. Unfortunately, 10 per cent produce miscarriages, stillbirths, or babies with birth defects.

Dr. Strean, a full-time research scientist, has made many discoveries in the fields of medicine and dentistry and was associated with the early development of penicillin and cortisone. His findings in this instance are supported in a foreword by Dr. H. E. Lehmann, of the Verdun (Quebec) Protestant Hospital.

The book is based upon 60 case histories, from which the author deduces that the major cause of these tragedies is stress, of one kind or another, during the first three months of pregnancy. The stress may be due to a fall, a blow, powerful medicines (e.g., penicillin), venereal diseases, metabolic diseases, dermatitis—or even an unhappy and unpleasant environment.

Dr. Strean's interest is in prevention, and his text is highly informative and optimistic. It should be read by prospective parents as well as obstetricians, gynecologists and general practitioners. Welfare workers will also find the book illuminating and useful.

—O. C.

Dr. Stephenson, who is Professor and Chairman of the *Department of Surgery at the* University of Missouri, says that his interest in cardiac arrest was stimulated while he served as an assistant to the late Dr. Evarts A. Graham at Barnes Hospital in St. Louis in 1948. Other contributors to the text are Elwyn L. Cady Jr., Medicolegal Consultant, Kansas City, Mo.; Clarence D. Davis, Associate Professor of Obstetrics and Gynecology, Yale University; Alex L. Finkle, Assistant Clinical Professor of Urology, University of California, San Francisco; Willem J. Kolff, member of the staff of the Division of Research of the Cleveland Clinic Foundation; Norman Morris, Bellevue Medical Center, N.Y.; and William A. Sodeman, Dean and Head of the Department of Medicine, Jefferson Medical College, Philadelphia.

This text, however, is much more than a review of the literature. It is a comprehensive report of everything that is known on the subject, including incidence under all conditions, diagnosis, etiology, management, precautions and complications, prevention, elective cardiac arrest for operations on the open heart, postresuscitative care and long-term neurologic sequelae. The index is thorough.

This text is an important addition to the literature on the subject.

—MAX THOREK

sent; the close collaboration between artist and author, however, leaves little to be desired in the understanding of Reichert's and Meckel's cartilages. The section pertaining to the diaphragm, particularly the all-important subject of hiatal hernia, is presented in some detail and is illustrated beautifully. Figure 277 shows the types of diaphragmatic hernia in an unusual and appealing way. This book can be recommended unreservedly to any one interested in surgical anatomy.

PHILIP THOREK, M.D.

Applied Medical Library Practice. By Thomas E. Keys. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 495. Illustrated.

The librarian of the Mayo Clinic has compiled a very thorough guide for the *users* of the medical library. He gives very cogent advice on the administration of the medical library, explains the accepted systems of cataloging and classification, the use of medical indexes, etc. There is also much historical material on the development of medical libraries and medical publishing in the United States. References are profuse, and the Appendix contains a list of publishers of medical and related books in the United States, arranged alphabetically by city; a list of the medical book-dealers in the United States who handle new books (arranged in the same way); a list of antiquarian booksellers; a list of top circulation medical journals; and a bibliography of medical works that have been reproduced in facsimile. The index is thorough.

This informative volume should be on every medical library shelf and in the personal library of all who have occasion to use sources of medical knowledge.

M. T.

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. . . Even when he was as much overlord of the continental medical professors as Frederick Barbarossa was over the Germanic princes in the Middle Ages, Rudolf Virchow's influence was always tempered by the rising science of bacteriology under Louis Pasteur and Robert Koch, who taught that microbes are the cause of disease, and that identifying and killing them is the main object of medicine. It would not be true to say that Rudolf Virchow overlooked microbes; but certainly he never wavered from his belief that the cell and the tissue of cells embodied the fundamental of disease. W. H. Welch stated that Virchow's conception of cellular pathology was the greatest advance which scientific medicine had made since its beginning.

—*Williams*

Abstracts from Current Literature

Vaginal and Abdominal Total Hysterectomy. Backer, O. G., and Kriestoffersen, K., Acta Chir. Scandinav. 114:67, 1958.

The early results of 99 vaginal and 110 abdominal hysterectomies are reported. The two approaches showed the same complication rate, 12 per cent following vaginal hysterectomy and 9 per cent following abdominal hysterectomy. The postoperative temperature curve and the duration of the stay in the hospital were identical. The total operative mortality rate was 1 per cent.

The late results were studied by a follow-up of 90 patients of the vaginal and 84 of the abdominal series. This revealed prolapse in 43 per cent of the vaginal cases. In the abdominal series 8 per cent had prolapse.

It is concluded from this study that vaginal hysterectomy offers no primary advantages over the abdominal procedure.

EDMUND LISSACK, M.D.

to four weeks the tumor was enucleated or excised. Then 10 mg. radium tubes with filters corresponding to 2 mm. of lead were immediately deposited in the wound cavity, where they were usually left for ten to twelve hours. In 81 patients primarily treated in this fashion and followed for five to eighteen years, no recurrences have been observed. *In a second group,* 14 patients operated upon at other hospitals with subsequent irradiation at the authors' hospital several days after the operation, there were recurrences in 2 of 6 patients who were treated only with intracavital radium and in 3 of 8 who were given only telegamma therapy. *In a third group* of 5 patients treated in the authors' hospital by operation only there were no recurrences, but this group was, of course, too small to be significant. *In a fourth group* numbering 54, treated by operation alone (enucleation or extirpation) at other hospitals, there were tumors, a combination of surgical treatment and irradiation is superior to surgical treatment alone.

The malignant parotid tumors (49) were treated along similar lines, except that the doses of irradiation were larger. The intracavital application of radium tubes was supplemented with postoperative telegamma treatment, usually through several fields, including also the regional lymph nodes. The overall frequency of recurrence in the various groups of malignant parotid tumors was high. Of the 49 patients, 1 or more recurrences developed in 21. There were 18 deaths from malignant disease, 14 of them within five years. Because of these discouraging results, the authors conclude that more radical surgical treatment in combination with radiotherapy must be recommended for malignant growths.

In the authors' clinic, most tumors are not operated upon until preoperative telegamma treatment has been given. Exceptions to this rule are superficial tumors freely movable beneath the skin. During operation the specimen is sent to the pathologist for immediate frozen section study. If the diagnosis is benign mixed tumor, radium tubes are placed in the wound cavity and no further measures are necessary. If it is malignant tumor, the operation is extended to include total parotidectomy, and, as a rule, radical neck dissection is added. Generally, the authors ocnsider postoperative irradiation indicated. If the histologic diagnosis cannot be made during the operation, radium tubes are inserted in the wound cavity. If the tumor is malignant the same plan is followed, usually with external radiotherapy added later.

THOMAS WILENSKY, M.D.

Meckel's Diverticulum in Childhood. McParland, F. A., and Kiesewetter, W. B., Surg. Gynec. & Obst. 106:11, 1958.

In this article the authors review the embryologic and pathologic anatomic aspects of Meckel's diverticulum. They describe the formation of the omphalomesenteric duct and explain how arrest of the obliterative process at different stages accounts for the variety of anatomic conditions observed. The common variants are named and described. These are fibrous cord, umbilical sinus, mucous cysts and the classic ileal diverticulum. The common complications of Meckel's diverticulum are hemorrhage, intestinal obstruction and perforation or inflammation of the diverticulum. Meckel's diverticulum is the most frequent congenital anomaly of the gastrointestinal tract. It is most often symptomatic in patients under 1 year of age. The chief complaints are rectal bleeding, abdominal pain, vomiting and a draining sinus. The treatment for this condition is surgical, and the authors express their opinion that all diverticula found at operation should be removed. All deaths in this series were due to severe complications in symptomatic cases. In conclusion, the authors *stress the point that Meckel's diverticulum* should be considered if rectal bleeding occurs in a patient under 2 years of age.

JAMES H. ERWIN, M.D.

Experiences with the Retrosternal Esophageal Replacement Employing Jejunum or Ileum. Jezioro, Z., and Kuz, H., Surgery 44:275, 1958.

An extensive experience in the construction of a retrosternal esophagus in 28 patients operated upon in Wroclaw, Poland, is herein submitted. All had suffered chemical burns of the esophagus at various times, and all had been previously treated by dilations and gastrostomy for months to years. In 23 patients the retrosternal esophagus was constructed from jejunum and from ileum, with a cecal cap including the ileocecal valve in the remaining 5. There was only 1 death, that of a man aged 50 who died from pneumonia four months after discharge.

In the author's opinion there are many advantages in constructing a totally new esophagus from small intestine and placing it retrosternally by means of a two-stage operation. They state that the procedure is simple and well tolerated. The placement of the intestine into the anterior mediastinum created no side effects referable to the thoracic viscera. Functionally and cosmetically the operation is far better than the antethoracic procedures and is better also than other transthoracic methods. The major problem revolves around the mobilization of a sufficiently long jejunal loop with its blood supply intact. Since 1951 they have been able to mobilize sufficient jejunum in almost all cases, owing to experience from an extensive anatomic study of the arterial and venous supplies to the portion of bowel selected for transplantation.

A carefully studied technic has been developed for the division of minimal numbers of blood vessels close to the roots of the superior mesenteric vessels, together with complete division of the intervening peritoneum in the intervascular spaces and the occasionally necessary displacement of the superior mesenteric vessels in a cephalad direction, with or without division of the ileocolic vessel.

At the first stage, mobilization of the jejunum or ileum was carried out and intra-abdominal anastomosis between stomach and bowel made after the small bowel had been pulled through the mesocolon. The retrosternal tunnel was then dissected and the mobilized intestine placed through it to the cervical region. The esophago-intestinal anastomosis in the cervical region was made at the second operation.

poxemia. Patients with advanced anemia, valvular disease or cyanosis, *for example*, do not have cardiac sensations despite low arterial oxygenation (60 per cent or less).

Clinical experience during cardiac surgical procedures, according to the experimental observations of C. S. Beck and his group, has shown that disturbances of heart action as well as the majority of infarctions are caused by electric phenomena. The latter are due to irregular blood distribution in the myocardium. Consequently, the therapeutic aim is to establish a continuously equal distribution of blood to all the parts of the heart muscle. This can be achieved by early dilation of the coronary collaterals to a diameter of up to 200 microns. Thus, full and lasting compensation is provided in advance for an anticipated or imminent obstruction of one of the coronary arteries, or for an already infarcted segment of the myocardium.

The four steps leading to an optimal dilation of the collateral vessels are: (1) Roughening of the pericardium and epicardium; (2) application of crude asbestos powder on the heart, in order to produce adhesions; (3) partial ligation of the sinus coronarius, and (4) attachment of mediastinal fat tissue to the heart with sutures.

against myocardial infarction and for the relief of angina pectoris.

ERNEST G. ABRAHAM, M.D.

A Study of 268 Patients with Carcinoma of the Midrectum Treated by Abdominoperineal Resection with Sphincter Preservation. Waugh, J. M., and Turner, J. C. Jr., Surg., Gynec. & Obst. 107:777, 1958.

The authors present follow-up data on 268 patients with carcinoma of the midportion (5 to 10 cm. above the dentate line) and upper portion of the rectum who underwent combined abdominoperineal resection with preservation of the anal sphincter. They concluded that if this procedure included ample resection of the sigmoid mesentery, the perirectal tissue and the internal anal sphincter in lesions located within 1 inch (2.5 cm.) of the levator, it would be a sound operation for carcinoma, the results of which would compare favorably with those following the Miles operation.

JOHN A. ZIEMAN, M.D.

A Histochemical Evaluation of Carcinoma in Situ of the Cervix Uteri. Nesbitt, R. E. L., Jr., and Stein, A. A., Surg., Gynec. & Obst. 107:161, 1958.

The cervical tissues obtained from biopsy and hysterectomy specimens were stained with hematoxylin and eosin and by periodic-acid-Schiff technics. The latter stain was useful in identifying the basement membrane and therefore in detecting objective invasion, as well as in estimating the degree of differentiation and maturation of the cervical epithelium. It appeared that carcinoma *in situ* of the ectocervix is a distinct entity, characterized by atypical basal cell hyperplasia with failure of cell maturation. When this lesion appears in the endocervix it results from reserve cell hyperplasia, with absolute failure in differentiation as well as in maturation.

Until more is known of the fine correlation of structure and function, considerable effort should be exerted to establish precise and uniform histologic criteria for the diagnosis of carcinoma *in situ*.

The cervical tissues from 42 acceptable cases of carcinoma *in situ* were subjected to careful histologic and cytochemical study in this series. The purpose of the study was to seek specific histologic criteria for diagnosis, to search for a reliable method of identification of the basement membrane and to attempt evaluation of the biologic characteristics of the lesion.

EDMUND LISSACK, M.D.

Anterior Approach to the Upper Ureter. Tauber, A. S., and Maluf, N. S. R., J. Urol. 80:13-16, 1958.

The authors describe the anterior approach to the upper portion of the ureter.

The advantages of this incision over the classic lumbar incision are: (1) the ureter is exposed quickly; (2) heavy muscles, blood vessels and nerves are avoided; (3) postoperative pain and ileus are minimal, and (4) the patient does not have to be "jack-knifed" into position.

This approach is not recommended for full exploration of the kidney.

SHEPARD JEROME, M.D.

Cervical Tampon-Synchronous Test for Ovulation. Doyle, J. B., J.A.M.A. 167:1464, 1958.

There is a period in each month when the mature graafian follicle will expel its liquor folliculi. Unless promptly aspirated by the tubes the egg floats down the side of the pelvis, where, if tubal motility and patency are unimpaired, one of the tubes will siphon it up and propel it toward the uterus.

The cervical value determined by the tampon Tes-Tape test for dextrose in the cervical mucus becomes maximal synchronously with positive results of tests from cul-de-sac transudate of liquor folliculi. Simultaneous positive results are observed after contact for one minute with fluid directly aspirated from the follicle. The test appears to be a good direct test for studying tubal siphonage of liquor folliculi.

This simple test, which can be done at home, has been devised for a sharp rise in the dextrose concentration present in the cervical secretion simultaneously with the occurrence of ovulation.

EDMUND LISSACK, M.D.

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
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Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

April 12-15 Shiraz, Iran	Iranian Section International College of Surgeons
May 6 Indianapolis, Indiana	Indiana State Division U. S. Section, International College of Surgeons
May 21 Bangkok, Thailand	Thailand Section International College of Surgeons
May 21-22 Huntsville, Alabama	Alabama Surgical Section U. S. Section, International College of Surgeons
May 28-30 Kiamesha Lake New York	New York State Annual Meeting U. S. Section, International College of Surgeons
June 1-3 Hamburg, Germany	German Section and German-Speaking Sections, European Federation International College of Surgeons
June 19-21 Lyons, France	French Section International College of Surgeons
July 25-26 Amsterdam, Netherlands	The Netherlands Section International College of Surgeons
August 8-9 Helsinki, Finland	Finland Section International College of Surgeons
August 19-20 Vienna, Austria	Austrian Section International College of Surgeons
September Santos, Brazil	Brazilian Section International College of Surgeons
September 28-29 Chattanooga Tennessee	Tennessee Valley Medical Assembly U. S. Section, International College of Surgeons
October 30 Hong Kong, China	China—Hong Kong Section International College of Surgeons
November 2 Bangkok, Thailand	Thailand Section International College of Surgeons
December Taipei, Taiwan (Formosa)	China—Formosa Section International College of Surgeons
December Jaipur (Rajasthan) India	India Section International College of Surgeons

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

MIDSUMMER POSTGRADUATE EUROPEAN TOUR

July 17 - August 27, 1959
Dr. Ross T. McIntire, Coordinator

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation
(Canada, Mexico, U. S. and Central American Sections)
International College of Surgeons
SEPTEMBER 13-17 CHICAGO, ILLINOIS

AROUND-THE-WORLD POSTGRADUATE CLINIC TOUR

October 10 - November 28
Dr. Edward L. Compere, Coordinator

1960

TWELFTH BIENNIAL INTERNATIONAL CONGRESS

International College of Surgeons
MAY 15-18 ROME, ITALY

Schedule of Meetings

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Congress of German-Speaking Sections of European Federation

INTERNATIONAL COLLEGE OF SURGEONS

Hamburg, Germany June 1-3, 1959

Prof. Dr. A. W. Fischer, F.I.C.S. (Hon.)
President, German Section

Formal invitations have now been issued to the members of the four German-speaking Sections of the European Federation of the International College of Surgeons to attend the Congress to be held in Hamburg, Germany, June 1-3. The four Sections are those of Germany, the Netherlands, Austria and Switzerland. An open invitation is also extended to all members of the College who wish to avail themselves of the opportunity to participate in a well-organized scientific program that is particularly oriented toward the clinical and practical aspects of the subjects under consideration.

The invitation is issued over the signatures of **Prof. Dr. A. W. Fischer, F.I.C.S.** (Hon.), professor of surgery of the University of Kiel and president of the German Section of the College, and of **Prof. Dr. K. Boshamer**, chief of surgery at the Town Hospital of Wuppertal-Barmen and secretary of the Section.

The opening assembly will take place on Monday morning, June 1. There will be a reception and addresses of welcome. **Dr. Steltzner** of Hamburg will give an evaluation of the historic importance of Hamburg in the development of surgery.

Dr. Horatz of Hamburg will present a paper on anesthesia, and **Dr. Lindenschmidt** of Hamburg one on postoperative metabolic and ingestive disturbances. Both papers will be followed by open discussion.

Prof. Dr. Leopold Schönbauer, F.I.C.S.
President, Austrian Section

On Tuesday, June 2, there will be simultaneous sessions devoted to the surgical specialties. Operative procedures will be demonstrated; patients will be introduced, and their cases will be fully discussed. Congressists will have the choice of attending the following:

only the International College of Surgeons Tours, because of *painstaking preparation,* can enable you to.

Fortunate beyond all expectation will be the surgeons and their families who will join **Dr. Ross T. McIntire,** our distinguished executive director of the International College of Surgeons, on an extraordinary journey which will prove to be informative, stimulating and most enjoyable.

Mutatis Mutandi

Times change, and with them our points of view. Change is the law, not only of the function of our minds, but of our physical structure, which constantly undergoes change.

So is it also in the large world of political realities. Now our state department sanctions and encourages exchange of surgical missions and health meetings in general, between us and Russian doctors, in the hope that nonpolitical contacts between specialists can to some degree help to effect an easing of tensions between the two countries. This is *comme il faut.*

Certainly such an exchange can only bear clear witness, for all the world to see, that it is our earnest desire to withhold no iota of information, no inkling of any progress, in surgical science and technic, from surgeons anywhere in the world. Equally, we are ready to accept gratefully any information of value which may be imparted to us, so that we may serve humanity more ably. To make a secret of scientific knowledge or to fail to make use of any that may be available, in view of the basic principles of the International College of Surgeons, is to us both inhuman and unthinkable.

Therefore, reflecting the high hope of the government of the United States, the Midsummer European Postgraduate Tour of the International College of Surgeons is including Russia, with stopovers at Leningrad and Moscow, confident that only good can come of contacts which avoid divisive political ideologies and concentrate on abiding devotion to science and concern for the health of mankind.

Max Thorek

LA PRESSE MEDICALE

Le grand journal français de chirurgie et de médecine paraît chaque semaine, et donne toutes les informations scientifiques et professionelles

ABONNEMENT

$17.00 par an.

Prière d'envoyer directement le montant de l'abonnement à:
LA PRESSE MEDICALE, Masson et Cie, éditeurs
120 Boulevard St.-Germain Paris VI, France

Doorways to Europe

MIDSUMMER EUROPEAN POSTGRADUATE CLINIC TOUR

July 17 - August 27

Were Shakespeare to come with us on our Midsummer European Postgraduate Clinic Tour, he might write a sonnet sequence on its progression. For in every sense this trip offers everything. And while it is not the only tour planned for this year (don't forget the Around-the-World Tour offered in October and November), in many ways this is extremely enticing. Truly a "tide to be taken at the flood."

Here are nine reasons why:

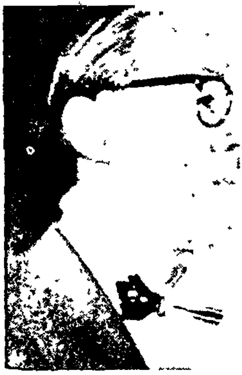
Holland, Denmark, Norway, Sweden and Finland are countries not often visited on International College of Surgeons tours. Consequently the scientific meetings in Amsterdam and Helsinki will be of lasting interest. These amazing lands of dikes, fjords and northern lights offer much in themselves as well. **Russia**, included in an International College of Surgeons tour itinerary for the first time, provides an opportunity to probe the unknown and explore the mysteries of that curtained country.

Austria, Germany and France are old friends to International College of Surgeons travelers and there is certainly nothing more rewarding than spending time among old friends. The highlight of this continental portion of the tour is the meeting with the Fellows of the Austrian Section in Vienna.

And there you are! Nine great countries offering nine good reasons for taking part in this July and August 1959 Midsummer *Doorways to Europe* tour.

Because of limitations in traveling space and hotel accommodations, you are sincerely urged to make it easy for yourself and to make your reservations now.

Frederiksberg Castle in Denmark



Dr. George Chapchal, F.I.C.S.
President
The Netherlands Section

Dr. A. Nicolet, F.I.C.S.
President
Switzerland Section

Section on Thoracic and Abdominal Surgery
Hamburg-Eppendorf Surgical Clinic — **Dr. Zukschwerdt**
Various televised operations, with brief commentary

Section on Trauma
Hamburg Port Hospital—**Dr. Küntscher**
Nailing; Management of pseudarthrosis

Section on Urology
Hamburg Elizabeth Hospital—**Dr. Bischoff**
Megalo-ureter operation (or hydronephrotic plastics)
Demonstrations and film presentations

Section on Gynecology
Hamburg-Eppendorf University Women's Clinic—**Dr. Schubert**
Operations and demonstrations

On Wednesday, June 3, the program will include the following:

Section on Surgery and Orthopedics
Kiel University Surgical Clinic — **Dr. Fischer, Dr. Wanke, Dr. Rohlederer**
Demonstrations

Symposium on Angiology
Itzehoe State Hospital—**Dr. Loose**

Section on Plastic Surgery
Hamburg-Northwest-German Maxilofacial Clinic—**Dr. Schuchardt**
Operations and Demonstrations

Section on Urology
Hamburg-Barmeck Surgical Clinic—**Dr. Junker**
Operations (possibly cystectomy) and demonstrations

Section on Gynecology
Hamburg-Altona Women's Clinic—**Dr. Schultz**
Vaginal operations; antibiotic prophylaxis

Program of Social Activities Carefully Organized

An extremely inviting program of social and recreational activities has been arranged for the congressists and their families.

On Monday, the ladies are most cordially invited to attend the formal opening session.

In the afternoon and evening there will be a festive boat excursion with afternoon coffee and later a supper which will feature seafood and local dairy products. The occasion will be informal and designed to foster friendly sociability.

On Tuesday afternoon the Senate of the Free and Hanseatic City of Hamburg will hold a reception for the congressists and their families at the City Hall.

Additional parties have been planned for the ladies, including museum tours and sightseeing excursions.

Transportation by bus will be provided both for the congressists to and from the clinics and for the ladies on their tours.

Doorways to Europe

MIDSUMMER EUROPEAN POSTGRADUATE CLINIC TOUR

July 17 - August 27

Were Shakespeare to come with us on our Midsummer European Postgraduate Clinic Tour, he might write a sonnet sequence on its progression. For in every sense this trip offers everything. And while it is not the only tour planned for this year (don't forget the Around-the-World Tour offered in October and November), in many ways this is extremely enticing. Truly a "tide to be taken at the flood."

Here are nine reasons why:

Holland, Denmark, Norway, Sweden and Finland are countries not often visited on International College of Surgeons tours. Consequently the scientific meetings in Amsterdam and Helsinki will be of lasting interest. These amazing lands of dikes, fjords and northern lights offer much in themselves as well. **Russia,** included in an International College of Surgeons tour itinerary for the first time, provides an opportunity to probe the unknown and explore the mysteries of that curtained country.

Austria, Germany and France are old friends to International College of Surgeons travelers and there is certainly nothing more rewarding than spending time among old friends. The highlight of this continental portion of the tour is the meeting with the Fellows of the Austrian Section in Vienna.

And there you are! Nine great countries offering nine good reasons for taking part in this July and August 1959 Midsummer *Doorways to Europe* tour.

Because of limitations in traveling space and hotel accommodations, you are sincerely urged to make it easy for yourself and to make your reservations now.

Frederiksborg Castle in Denmark

Postgraduate Courses and Conferences

AUSTRIA

VIENNA

The American Medical Society of Vienna
and
The University of Vienna

Postgradute Courses in Surgical Science Provide Opportunities for Postgraduate Work in Various Fields of Surgery

For information write: Dr. M. Arthur Kline, F.I.C.S., Secretary, American Medical Society of Vienna, 11 Universitätsstrasse, Vienna, Austria.

FRANCE

Special Course in Urologic Surgery
May 14-16, 1959
Prof. Dr. Raymond Darget, F.I.C.S.
of the University of Bordeaux
at the
Cancer Prevention Center and the
Clinic Saint-Augustine
BORDEAUX

Subjects

Treatment of tumors of the bladder, including radium therapy and palliative measures such as denervation of the bladder and uretero-intestinal anastomosis.

Treatment of malignant prostatic tumors by perineal ischio rectal implantation of radium needles.

The course will include operations, films, presentation of patients and results of treatment.

Number of participants is strictly limited. Those interested should write promptly to

Prof. Dr. Raymond Darget
17, rue Castéja
Bordeaux, France

SPAIN

BARCELONA

Hospital de la Santa Cruz y San Pablo
Surgical Service

Dr. Jose Solar-Roig, F.I.C.S.
DIRECTOR

ADVANCED COURSES IN SURGERY OF THE DIGESTIVE TRACT
(For Postgraduates)
Under the Auspices of the
International College of Surgeons

UROLOGIC INSTITUTE

Dr. A. Puigvert, F.I.C.S., Director

COURSE XX

POSTGRADUATE SEMINAR
on
Diseases of the Bladder
Symptomatic and Surgical Aspects

April 20-25, 1959

This seminar, lasting six full days, from 8:30 a.m. to 7:00 p.m. will include practice in endoscopy and urography.

Those registered for the seminar will be limited in number and may continue their work at the Institute for three months.

For further information address: Secretaría del Instituto de Urología, Pabellón de la Asunción, Hospital de la Sta Cruz y San Pablo, Barcelona 9, España.

International Surgeons' Hall of Fame

VISITORS FROM FAR AND NEAR

GUESTS WITH SPECIAL INTER EST IN GREEK EXHIBIT

Dr. Harry Fournier of Chicago wa happy to guide these guests throug the Hall of Fame. The Greek Roor appealed to them particularly. The are, with Dr. Fournier, Mrs. Georg Samaras, wife of a member of th Greek Parliament who now is a spe cial representative at the United Na tions; Mrs. K. Rombakis, a socia service worker; Mr. K. Rombaki formerly a professor of physics i Greece and now an electronics en gineer in Chicago, and Mr. John Rom bakis. Chicago architect.

OPERA STAR APPRECIATES DRAMA OF SURGICAL HISTORY

Among the most enthusiastic of recent visitors to the International Surgeons' Hall of Fame were (at left) the famous operatic soprano Mme. Rosa Raisa Rimini and her friend, Mrs. Theodore Cornbleet, wife of Dr. Theodore Cornbleet of Chicago.

Postgrad

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He spent two years in Amsterdam, Holland, at that time the foremost center for the study of neurology. He worked with Prof. C. U. Ariens Kappers, Prof. R. Brouwer and Prof. Oljenik.

Carrillo evidenced marked capacity for research. In the field of cerebral sclerosis he isolated the form which was named both by Prof. Brouwer and by Prof. Altieri of Italy *forma esclereatrofiante de Carrillo.* In his work on polineuritis (induced) he demonstrated that it was provoked by phosphate of creosote, an ingredient of a popular drink known as Jamaica ginger, which gave its name to the condition—*ginger paralysis.*

His investigations into histo-chemical mechanics of impregnation and other technics of coloring neuroglia were completed during the years 1931-1932, partly in the neuropathological laboratory of the University under the supervision of Profs. Heringa and Brouwer. (He continued his investigations in this field later, during a ten-month stay in Paris, where he worked with Ivan Bertrand at Salpêtrière.)

Carrillo also conducted some very fruitful investigations into the phylogenic development of neuroglia which were known to and appreciated by Ariens Kappers.

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At the end of the year 1933 Carrillo returned to Buenos Aires. Drs. José Arce and Manuel Balado entrusted to him the organization of the neuropathological laboratory of the Institute of Clinical Surgery, to which task Carrillo, after mornings devoted to neurosurgery, gave all his afternoons.

During the following years he published works concerning numerous phases of his specialty. When he applied for the post of adjunct professor of neurosurgery he submitted a total of a hundred and eleven works dealing with neurosurgery, neuropathology, comparative anatomy, neurophysiology, clinical neurology and psychiatric and clinical medicine.

Finally, based on yodoventriculography, the method devised by his teacher Balado, he published his first work dealing with radiology of the fourth ventricle, initiating a series of publications upon that original procedure which had its culmination in his masterwork upon the theme, *Yodoventriculagrafia, Fosa Posterior,* a book which received honorable mention in the national science awards of 1938.

By 1939 Carrillo was in charge of the service of neurology and neurosurgery at the Central Military Hospital. In that year I was appointed honorary intern of that hospital, and I was privileged to know him. The modesty of his personality attracted me, his talents and his ability, and, over and above all, the great generosity with which he invited me to follow in that specialty which I likewise embraced with fervor and enthusiasm.

In 1942, Dr. Balado died, and Carrillo was chosen to succeed him.

While Carrillo held the chair of neuro-

Ramón Carrillo

M.D., F.I.C.S. (Hon.)

1907-1956

RAUL F. MATERA, M.D., F.I.C.S.

BUENOS AIRES, ARGENTINA

Dr. Ramón Carrillo

On December 20, 1956, Dr. Ramón Carrillo, former titular professor of neurosurgery on the Faculty of Medical Science at Buenos Aires, former national minister of public health in Argentina and honorary member of the International College of Surgeons, died at Belém, Brazil.

To sketch objectively and realistically the saga of this extraordinary man, whose medical career was compounded of numerous and diverse talents, grounded on superlative technical ability and crowned throughout with honor, is most difficult.

An innately gifted youth, Carrillo made rapid strides in his education.

He pursued his secondary studies at the National College of Santiago del Estero, receiving his bachelor's degree in 1923, at the age of sixteen, the youngest in his class.

The following year he enrolled in the Faculty of Medical Sciences at Buenos Aires, and three years later won, through competitive examination, an internship in the National Clinical Hospital. Simultaneously he attended the Institute of Clinical Surgery at the invitation of Prof. José Arce, his first master in surgery.

At about this time, Dr. Manuel Balado

This article concerning Dr. Ramón Carrillo is a greatly abridged translation of a brilliant and comprehensive monograph written by Dr. Raul F. Matera, secretary of the Argentina Section of the International College of Surgeons.

Dr. Matera is head of the department of neurology and neurosurgery of the Central Military Hospital in Buenos Aires. For many years he was closely associated with Dr. Carrillo. It is a great tribute to the memory of an honored leader that his disciple, an eminent and busy surgeon scientist, should devote time and endless endeavor to so exhaustive a biography, with its painstaking research into every phase of the subject's manifold achievements.

We regret that lack of space has limited us to a condensation of Dr. Matera's thoughtful and sensitive evaluation of the life and works of a celebrated scientist, surgeon, teacher and administrator.

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From the Executive Director's Notebook

ANTICIPATING IMPORTANT EVENTS

Dr. Ross T. McIntire

The past few weeks have been given to program planning for the meetings that will be held during 1959. The Florida meeting laid a good pattern for all regions and states to follow.

It was my privilege to meet with the officers and the credentials committee of the New York State Section on January 31, when the plans for their state meeting, which will be held May 28-31, were discussed in full. **Dr. Henry P. Leis, Jr.**, the program chairman, has arranged an outstanding scientific program. The general chairman, **Dr. Milton Weinberg**, assures us that the arrangements at the Concord Hotel will be such that this also will be a very entertaining meeting. The women of the New York State Section auxiliary will provide entertainment for the families of the attending surgeons.

On the morning of January 31, I had the opportunity of visiting with **Dr. Alexander Brunschwig**, a vice president of the College, who is one of the outstanding surgeons in our country. I saw many of his cases at Memorial, and discussed with him methods of rehabilitation. The International College of Surgeons has a tremendous opportunity to further the cause of rehabilitation in all its phases, working through its many national chapters in the various countries of the world. Dr. Brunschwig, through his travels, has much first-hand information regarding the work done in other countries in this regard.

It was my privilege to appear before the Subcommittee on Health of the Committee on Labor and Public Welfare, on February 26, in support of the Senate Resolution SJ 41. The purpose of this bill is to further research in the field of prevention of disease and in the advancement of rehabilitation. The important phase of this bill is that it provides a method for an exchange of information in these fields, internationally. The International College of Surgeons, because of its world-wide membership, can be of great value in the implementation of such a program. I was highly honored to appear in support of this bill and to present supporting data gained by my work in rehabilitation in the Navy, the President's Committee and the College.

To further the international programs that are being presented this summer, a tour has been arranged for surgeons and their families to visit the countries of northern Europe. The itinerary is being announced, and the dates given, in this issue.

Outstanding in this tour will be the clinical meetings that will be held in Holland and Finland. The Amsterdam meeting, which will be held on July 25 and 26, promises to be most interesting. Again, we will emphasize international rehabilitation. Much has been done in Holland and Denmark in this field, and we shall be able to see this fine work, observe the methods used and note the results.

Our visit in Norway should be exceedingly interesting, for we have several friends there. There will be an opportunity, as well, to see much in Sweden.

In Finland, we have a very strong national chapter, composed of the outstanding surgeons of that country. Clinical ses-surgery he surrounded himself with men of exceptional ability. Together with them he inaugurated the period that Carrillo called the period of the systematizers.

In 1944 Carrillo was put in charge of the secretariat of public health of the nation, assuming the responsibility of that arduous task while retaining the chair of neurosurgery. He relinquished some of the tasks connected with the latter to Tomás Insausti and the author, who were accustomed to carry out his directives.

In 1945 the department of neurosurgery was transferred to the pavilion of Costa Boero and was reorganized as the Institute of Neurosurgery. It was the greatest organization of neurosurgeons and neurological specialists in all South America. Its work was under constant scrutiny, with frequent publication of statistical reports on its achievements. It received postgraduate students from all parts of South America.

The review, *Archives of Neurology,* which had been published by Dr. Manuel Balado, now came out newly rejuvenated under the title, *Archives of Neurosurgery,* and became highly influential.

In the year 1945, through the initiative of Drs. Alejandro Schroeder of Uruguay, Eliseo Paglioli of Brazil, Alfonso Asenjo of Chile, Ramón Carrillo and Rafael Babini of Argentina, Latin-American biennial congresses of neurosurgery were initiated. Dr. Ramón Carrillo was a member of the permanent committee of these congresses and the secretary general of the Third South-American Congress, held in Buenos Aires in 1949.

The Institute was also represented in numerous national and international congresses held in Argentina and abroad.

In the year 1953 Dr. Carrillo presented at the Fifth Latin-American Congress of Neurosurgery an important work, *Clinical-Anatomic Study of the Tumors of the Posterior Fossa,* in collaboration with Drs. Matera, Insausti, Prado, Casté and Elizabeth Franke.

Even while he was so productively engaged he began to suffer (in 1951) from the effects of a serious and progressive illness which finally led to his death. Malignant arterial hypertension with encephalopathic manifestations (headaches both obstinate and intense) obliged him to rest and interfered with his work. He resigned both the ministry and his position at the Institute to travel to the United States to seek peace and recuperation.

In recognition of his outstanding abilities and accomplishments Dr. Carrillo had been the recipient of numerous titles, honors, and decorations from universities, learned societies and governments. He had received extraordinary recognition at scientific congresses both at home and abroad. The list of his honors was long and well merited.

But in spite of honors and achievements, in spite of his own true worth, Ramón Carrillo's resources were scanty. He had to leave the United States and accept a position as a doctor with an American company exploring for metals. He was stationed at Belém, Brazil, where for a year he toiled in the heat of a Brazilian jungle, and, finally, died. A cerebral hemorrhage brought an end to the life of Ramón Carrillo.

The grief that all who knew him feel over the unhappy years of his illness and his death is profound, but it does not overshadow our joy and gratitude for the privilege of having known so eminent a man, who, with his great gifts, in his generosity, patriotism and urgent devotion to science, had accomplished so much for his generation and for his country.

Those who recall his noble soul and his serene wisdom know—and that is all we need to remember—Ramón Carrillo's life was radiant with inner light and with glory.

International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)
A World Federation of General Surgeons & Surgical Specialists, Inc.
"Instrument of the Free World"

OFFICE OF THE
INTERNATIONAL SECRETARY GENERAL
850 WEST IRVING PARK ROAD
CHICAGO 13, ILLINOIS

Dear Doctor:

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The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

We would appreciate your cooperation. Please return the attached subscription blank in the enclosed self-addressed envelope, and oblige

Yours sincerely,
PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
1516 Lake Shore Drive
CHICAGO 10, ILLINOIS
U. S. A.

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sions will be held here on August 8 and 9 —and again we will participate and the emphasis will be on rehabilitation.

Details of the Vienna and Munich visits will be given later.

It is my privilege and pleasure to serve as the coordinator of this postgraduate tour. It is my hope that many of our members will join me in this midsummer visit to the countries of northern Europe.

Plans are going forward rapidly in the formation of a program for the North American Federation meeting, which will be held in Chicago in September of this year. Dr. Peter Rosi is again program chairman and will present outstanding speakers from all parts of the world.

The Alabama State Surgical Section is holding its annual meeting on May 21 and 22, at the Russel Erskine Hotel in Huntsville, Alabama. Dr. Edwin V. Caldwell, executive vice-president of the Section, is in charge of arrangements and has prepared a most interesting scientific meeting. In addition to this, he has arranged for a visit on May 21 of all members to the Red Stone Arsenal, which is famous for the research that is being conducted there in the field of rockets and missiles. This should be a great attraction, for the opportunity of seeing this institution does not come often. An added feature of the meeting will be an address by Senator Lister Hill, who has done so much for medicine and health in our country. Senator Hill comes from an old medical family and has a great personal interest in our national health and in health throughout the world.

Ross T. McIntire

TWO GOOD SEASONS.....................Midsummer and Fall
TWO GOOD REASONS.....................Scientific and Social

INTERNATIONAL COLLEGE OF SURGEONS

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THE PRESIDENT'S MESSAGE

1959 Around-the-World Postgraduate Clinic Tour

Dr. Edward L. Compere

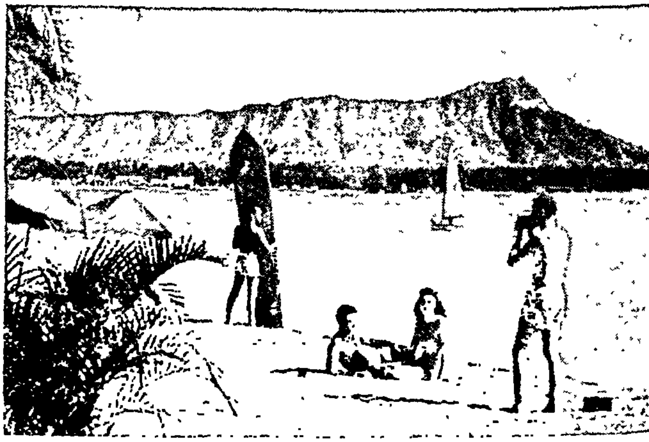
An itinerary for the 1959 Around-the-World Clinical Tour of the International College of Surgeons has been completed. It is a most inviting prospect for me to have the opportunity, as director of the tour, to travel with my friends and to visit our colleagues and co-Fellows of the International College of Surgeons in many different countries of the world. You will receive information from the International Travel Service about this Around-the-World Tour from time to time during the next several months.

I should like to have the pleasure of outlining some of the highlights of this fascinatingly interesting tour. Virginia Compere, my wife, plans to accompany me, and I hope that many of the other doctors making the trip will find it possible to have their wives with them also.

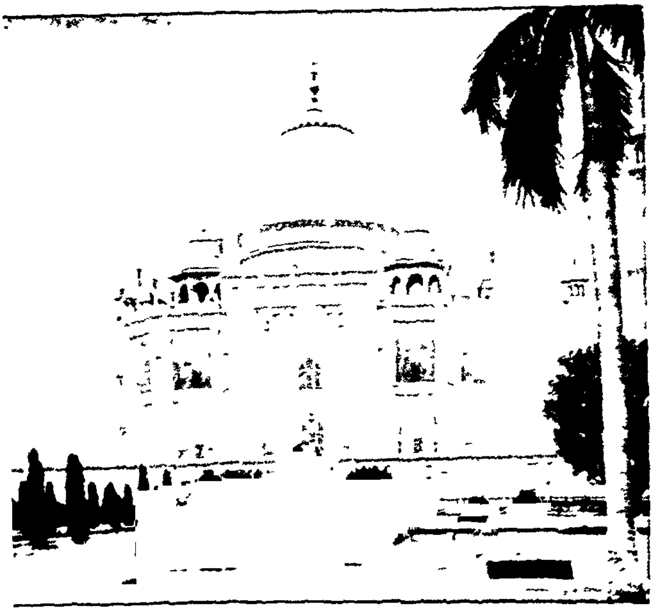
We are scheduled to leave San Francisco by air service Saturday, October 10, 1959, and to arrive in Honolulu in the mid-afternoon, transferring from the airport to the Hotel Royal Hawaiian. We expect to have some type of get-together with the Fellows of the International College who are living in Hawaii on Sunday, October 11, or Monday, October 12. Most of our time in Honolulu we will be at leisure to enjoy the beautiful scenery, the sunshine, and the famous surf at Waikiki Beach.

We will arrive in Tokyo early in the morning of October 15 and transfer to the Hotel Imperial, where we will have the balance of that day at leisure. Besides Tokyo, we will visit Nikko, Hakone National Park, Yokohama, Kamakura, Miyanoshita, Kyoto and Nara. While in Japan we will have one or more meetings with the Japanese surgeons, including, we hope, a visit to the hospitals of the University of Chiba, where our famous colleague, **Dr. Komei Nakayama**, does some of the most remarkable surgery to be seen anywhere in the world.

From Tokyo we go to Hong Kong October 25, 1959, and will be in Hong Kong through October 30, 1959. A meeting of the Fellows of the International College of Surgeons is scheduled for October 30. From Hong Kong we go to Thailand for three days, then to India for five days, and from India to Ceylon. In India we will be kept busy seeing such interesting places as Agra, Jaipur, Delhi, and Madras. While in Ceylon we hope to take part in helping to form a new Section of the College.



Famed Diamond Head is the background at Waikiki Beach, Oahu, in Hawaii



The Taj Mahal in Agra, India

From Ceylon we fly to Cairo, Egypt, for two days of very fascinating sightseeing; then to Lebanon and a tour of Baalbek, the most amazing of all of the ruins of temples and palaces built by the ancient Romans. We will also have about one-half day in the city of Damascus. From Beirut, Lebanon, it is a flight of less than one hour to the ancient city of Jerusalem in the country of Jordan. From the old city with many nearby biblical sites, including Bethlehem, we will pass through the Mandelbaum Gate into New Jerusalem and spend two days visiting the dynamic little country of Israel.

A Bit of Europe Too

Istanbul, Turkey and the Hotel Istanbul Hilton will be our next stop. After three days of sightseeing in Turkey and visiting with the Fellows of the International College of Surgeons there, we will be off on the last part of the official flight to Athens, Greece, where special arrangements have been made for our entertainment and enlightenment by the Fellows of the Greek Section of the International College of Surgeons.

When we leave Athens, those who prefer may come directly back to the United States, landing in New York. Those who wish to do so can be on their own for visits in various countries in Europe. The official trip from San Francisco back to New York covers a total time of fifty-two days. The cost of first-class transportation for the Tour has been listed at about $3,450.

We Girdle the Earth and Take Motion Pictures in Color

Ours is truly an International College of Surgeons, and it is the international aspect of the College which justifies its existence. Those who cannot accompany us on this trip will have the opportunity of seeing the beautiful Kodachrome pictures made by Dr. Arnold Jackson of the 1958 Tour, which will be shown one evening during the North American Federation Congress in Chicago, September, 1959. We hope to have equally good pictures, including Kodachrome movies, to show at various meetings of the Fellows of the College in 1960. If you are interested in this World Clinical Tour, please let me know.

Edward L. Compere

Ruins of the Parthenon in Athens

New York State Surgical Section

INTERNATIONAL COLLEGE OF SURGEONS

ANNUAL SPRING MEETING

Concord Hotel Kiamesha Lake New York

May 28, 29, 30 and 31, 1959

Dr. Milton Weinberg
GENERAL CHAIRMAN

Dr. Horace E. Ayers
REGENT

Dr. Edwin Grace
PRESIDENT

Dr. Charles H. Thom
CHAIRMAN, RECEPTION COMMITTEE

Dr. Sam Clayton
CHAIRMAN, PUBLICITY COMMITTEE

SCIENTIFIC PROGRAM
COMMITTEE

Dr. Henry Patrick Leis, Jr.
CHAIRMAN

Dr. Joseph P. Alvich
Dr. Anthony F. DePalma
Dr. John Mussio
Dr. Magin Sagarra
Dr. Max M. Simon
Dr. Martin Stone
Dr. Samuel A. Thompson
Dr. Frank Fierro

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Dr. Gaspar M. Adamo, Long Island City, New York
Dr. J. Edwin Alford, Buffalo, New York
Dr. Joseph P. Alvich, New York City
Dr. Irving M. Ariel, New York City
Dr. Horace E. Ayers, New York City
Dr. Dante V. Bizzari, New York City
Dr. Con Amore Burt, New York City
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Dr. Anthony F. DePalma, Philadelphia, Pennsylvania
Dr. Gilbert F. Douglas, Birmingham, Alabama
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Dr. James Patrick Fleming, Rochester, New York
Dr. Oscar Hugh Fulcher, Washington, D. C.
Dr. Frank A. Gagan, Poughkeepsie, New York
Dr. Jerome Gelb, West Orange, New York
Dr. S. Thomas Glasser, New York City
Dr. William H. Godsick, New York City
Dr. Edwin J. Grace, Brooklyn, New York
Dr. Harry J. Greene, Brooklyn, New York
Dr. Earl J. Halligan, Jersey City, New Jersey
Dr. Theodore Himelstein, New York City
Dr. Raymond W. Houde, New York City
Dr. Arnold S. Jackson, Madison, Wisconsin
Dr. Gerald H. Klingon, New York City
Dr. Lester S. Knapp, Buffalo, New York
Dr. Adrian Lambert, New York City
Dr. Francis S. Latteri, New York City
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Dr. Sylvan D. Manheim, New York City
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Dr. Samuel Simon, Poughkeepsie, New York
Dr. Edward Solomons, Brooklyn, New York
Dr. Martin L. Stone, New York City
Dr. Paul H. Sullivan, Great Neck, New York
Dr. James W. Watts, Washington, D. C.

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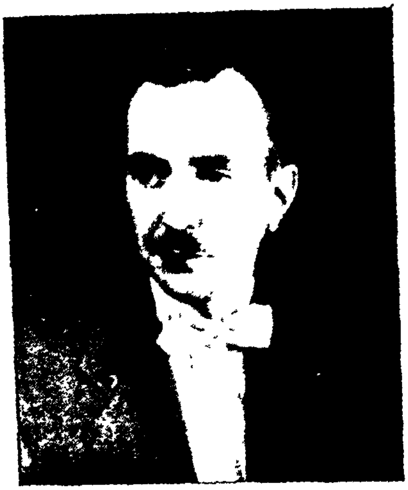

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Dr. Edward Solomons, Brooklyn, New York
Dr. Martin L. Stone, New York City
Dr. Paul H. Sullivan, Great Neck, New York
Dr. James W. Watts, Washington, D. C.

Announcement of Research Grant

Offered by the

SECTION ON OPHTHALMOLOGY AND OTO-RHINO-LARYNGOLOGY

International College of Surgeons

The Section on Ophthalmology and Oto-Rhino-Laryngology of the International College of Surgeons has established a Research Grant. This Section is especially interested in the following forms of scientific inquiry.

Furstenberg Plan

A young specialist, a resident, or a medcal student may be given an opportunity to explore scientifically under supervision. A panel of experts will be invited to serve n an advisory capacity using related fields n science and medicine as a means of inviting new approaches. The young researcher will be required to submit his idea to this group. If approved, a grant will be made available and the work will be done under the direct supervision of a physician of professorial rank.

Leopold Plan

An ophthalmological or oto-rhino-laryngological summer fellowship may be instituted for a research project for the purpose of giving potential investigators opportunities to do actual research and to become acquainted with the possibilities of ophthalmology and oto-rhino-laryngology.

Scheie Plan

Junior and Senior medical students of superior ability may be encouraged to enter the special fields of ophthalmology and oto-rhino-laryngology.

Participation Plan

A grant may be given in cooperation with other sponsors in order to help make possible major research projects.

Please apply, giving details and ideas, to

Paul C. Craig, M.D., Chairman
Committee on Scientific Work
232 N. Fifth St., Reading Pa.

Alabama Surgical Meeting

Huntsville, Alabama

May 21-22, 1959

The annual meeting of the Alabama Surgical Section of the International College of Surgeons will be held in Huntsville, Alabama, May 21-22.

U. S. Senator Lister Hill

Major General John Bruce Medaris

Dr. Wernher Von Braun

Alabama's senior United States Senator **Lister Hill** will be the guest speaker at the banquet, and will be introduced by the junior senator, **John Sparkman.** This should be a dinner long to remember.

The plans for the scientific program are progressing very satisfactorily and the occasion promises to be an important event on every count.

One of the most interesting excursions ever organized for a meeting will be an afternoon tour on May 21 of the Redstone Arsenal for the surgeons and their wives. This is a great courtesy, on the part of Major Gen. John Bruce Medaris, commanding general of A.O.M.C., and his staff, towards the International College of Surgeons.

If the press of duties, national or international, permits, General Medaris and his staff will honor the closing banquet of the meeting with their presence.

The Alabama meeting is of a caliber that warrants the attendance not only of every member of the state section, but of every surgeon who can find it possible to travel to Huntsville to participate in these outstanding proceedings.

Dr. E. V. Caldwell, F.A.C.S., F.I.C.S., of Huntsville, is the executive first vice-president of the Alabama Section and chairman of the meeting.

Official Personnel List

REDSTONE ARSENAL

Major Gen. John Bruce Medaris,
Com. Gen. of A.O.M.C.

Brig. Gen. Joseph M. Colby,
Dep. Com. of A.O.M.C.

Brig. Gen. John A. Barclay,
Com. Gen. A.B.M.A.

Brig. Gen. John G. Shinkle,
Com. Gen. A.R.G.M.A.

Col. Keith T. O'Keife,
Com. Officier Redstone Arsenal

Dr. Wernher Von Braun,
Tech. Director of the D.O.D. A.B.M.A.

Col. Harry C. McClain,
M.C., Post Surgeon

Lt. Col. Hensley Johnson,
M.C., Assistant Post Surgeon

Dr. Burton Shook,
Chief of Army Health Service

THE JOURNAL AND BULLETIN
of the
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News Briefs

DR. ERIC MOBERG OF SWEDEN ENTERTAINED BY SCHOLARSHIP COMMITTEE

On Wednesday, January 28, 1959, the Scholarship Committee of the International College of Surgeons entertained at a luncheon at the College Home in Chicago for **Dr. Eric Moberg** of Gottseborg, Sweden, a prominent hand surgeon, and **Dr. Francis M. Howard** of Chicago, who is the recipient of a scholarship from the International College of Surgeons. Dr. Howard will journey to Sweden in July of 1959 and will study surgery of the hand with Dr. Moberg for a period of one year. This scholarship is made possible by the contributions from the Woman's Auxiliary of the International College of Surgeons.

Present at the luncheon were a number of young surgeons from the Chicago area. **Dr. Ralph Lidge, Dr. Sidney Shafer, Dr. William Newman** and **Dr. Robert W. Ray,** all of Chicago, were among those present, as were **Dr. Zigmund Kosicki** of El Paso, Texas, and **Dr. William McCall** of San Diego, California, who is a resident in orthopedic surgery at the University of Illinois. Dr. McCall was an all-American football player at Stanford University and during the past seven years has been one of the outstanding players with the Chicago Bears.

Members of the Scholarship Committee who were present at the luncheon were, **Dr. Horace Turner,** chairman; **Dr. Louis Plzak,** and **Dr. Jerome Moses. Dr. Edward L. Compere,** president of the United States Section, together with **Dr. Ross T. McIntire,** the executive director of the college, greeted the visitors.

Following the luncheon, the visitors spent some time going through the International Surgeons' Hall of Fame.

DR. ELBYRNE G. GILL HEADS OPHTHALMOLOGY AND OTOLARYNGOLOGY MEETING

The Gill Memorial Eye, Ear and Throat Hospital and the Elbyrne G. Gill Eye and Ear Foundation will hold their Thirty-Second Spring Congress in Roanoke, Virginia, April 6-11, 1959.

Lectures and demonstrations will deal with ophthalmology, otology, rhinology, laryngoscopy, maxillofacial surgery, bronchoscopy and esophagoscopy.

Dr. Elbyrne G. Gill, F.A.C.S., F.I.C.S., regent of Virginia for the United States Section of the International College of Surgeons, is chief surgeon at the Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia.

DR. IRVING B. GOLDMAN HEADS POSTGRADUATE COURSE IN RHINOPLASTY AND OTOPLASTY

An intensive postgraduate course in rhinoplasty, reconstructive surgery of the nasal septum and otoplasty will be given July 11-24, 1959, by **Dr. Irving B. Goldman,** F.A.C.S., F.I.C.S., D.A.B., and his staff at the Mount Sinai Hospital in affiliation with Columbia University.

Candidates for the course should apply to: Registrar for Postgraduate Medical Instruction, Mount Sinai Hospital, 5th Avenue and 100th Street, New York 29, New York.

DR. CHAMOVE ELECTED PRESIDENT OF EYE RESEARCH FOUNDATION

Dr. Arnold S. Chamove, F.I.C.S., of San Francisco, California, has been elected president of the Eye Research Foundation, Incorporated, a charitable corporation sponsored by the Lion's Club of San Francisco.

THIRD LECTURE SERIES

1958-1959

School of the History of Surgery and Related Sciences
International Surgeons' Hall of Fame
1524 Lake Shore Drive, Chicago

LECTURES BEGIN AT 8:00 P.M.

OCTOBER 21, 1958 . . . . *"Changing Concepts of Disease"—Dr. Ilza Veith, Associate Professor in the History of Medicine, Department of Medicine, University of Chicago, Chicago, Illinois*

NOVEMBER 11, 1958 . . . . *"Epochs in the History of Medicine"—Dr. Morris Fishbein, Professor Emeritus of Medicine, University of Chicago and University of Illinois, Chicago, Illinois*

DECEMBER 2, 1958 . . . . *"The History of Hospitals"—Dr. Charles U. Letourneau, Director, Program in Hospital Administration, Northwestern University, Chicago, Illinois*

JANUARY 13, 1959 . . . . *"The History of Gynecology"—Dr. A. F. Lash, Clinical Professor of Obstetrics and Gynecology, University of Illinois, Chicago, Illinois*

FEBRUARY 3, 1959 . . . . *"The History of Neurosurgery"—Dr. Percival Bailey, Distinguished Professor of Neurology and Neurological Surgery, University of Illinois, Chicago, Illinois*

FEBRUARY 24, 1959 . . . *"Notes About the Role of Physicians in Our Military History"—Dr. George S. Lull, Assistant to the President, American Medical Association, Chicago, Illinois*

MARCH 24, 1959 . . . . . *"Evolution of Medical Illustration"—Thomas S. Jones, M.S., Emeritus Professor of Medical and Dental Illustration, University of Illinois, Chicago, Illinois*

APRIL 14, 1959 . . . . . . *"The History of Surgery of Bones and Joints"—Dr. Edward L. Compere, Professor and Chairman of the Department of Orthopedic Surgery, Northwestern University and Chicago Wesley Memorial Hospital, Chicago, Illinois*

MAY 5, 1959 . . . . *"The Evolution of Otorhinolaryngology and Bronchoesophagology" — Dr. Francis L. Lederer, Professor and Head of Department of Otolaryngology, University of Illinois, Chicago, Illinois*

MAY 21, 1959 . . . . . . *"The History of Plastic Surgery"—Dr. Wayne B. Slaughter, Clinical Professor in Charge of Plastic Surgery, University of Wisconsin (Madison) and Stritch School of Medicine, Loyola University, Chicago, Illinois*

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

On Husbands and the Auxiliary

Mrs. Earl Ingram Carr

In a moment of reflection not long ago, it occurred to me that our Auxiliary offers one of the few avenues of approach open to us which lead to a participation in the professional life of our husbands.

It is superfluous to state, of course, that the rigid ethics of the profession place well-defined restrictions on the exchange of information between surgeon and wife. At the outset this may have been somewhat frustrating to some of us, but, happily, time somehow contrives to make this self-imposed silence a sort of occupational discipline.

Honor of the Profession

Actually these uncompromising ethical standards add to the esteem in which the profession of surgery is held. However, marriage counselors often recommend a healthy exchange of the day's happenings between husband and wife, particularly on a day when he comes home from the office tired and depressed, filled with the trials and tribulations of a hectic day. In a good many professions this is standard procedure, and the husband feels free to divest himself of his problems in an animated conversation with his loved ones.

The Bond of Shared Aims and Purposes

Now, I am not trying to imply that the Auxiliary provides any direct participation in the careers of our husbands. But it certainly does expose us to an integral and stimulating aspect of his professional life. We are privileged to meet people with much the same aspirations, hopes and ideals—people dedicated to improving the lot of the human race.

I know personally that I have felt this surge of stimulation and challenge at any Auxiliary meeting I have attended—indeed, in any Auxiliary activity in which I have participated.

Mutuality of Interests Can Be Cultivated

It is not my intent here to delve into the psychological ramifications of our married lives. This is much too awesome a subject. But it seems to me that the Auxiliary has values that should not be overlooked.

The Auxiliary provides a common ground for both surgeon and wife, an area in which the social amenities and ennobling facets of our lives are enjoyed to the fullest.

There is undeniably an international flavor to the meetings of the College, a one-world aura that encompasses our gatherings. This pooling of information by some of the most profound medical minds in the world is truly an experience that one does not soon forget.

I know I must sound repetitious in my anvil-like chorus on the virtues of an enlarged membership in our Auxiliary. But if our scholarship exchange program is to flourish we must have an ever-growing membership.

Won't you take it upon yourself to send in one new membership TODAY? I sincerely hope so.

Ruth Smith Carr

Allied Medical Career Girls Tour International Surgeons' Hall of Fame

The officers of the International College of Surgeons are happy to have the Surgeons' Hall of Fame visited by young students, to whom the experience invariably is illuminating and not infrequently inspiring.

Students Preparing Themselves for Allied Medical Careers

Particularly pleasing, therefore, was the recent visit of eighty girls, all members of the Allied Medical Career Clubs of Lee County in Illinois.

The sponsor of the visit was **Mrs. Robert LeSage**, of Dixon, Illinois, a member of the board of the Woman's Auxiliary to the United States Section of the International College of Surgeons and chairman of the Auxiliary's memorial fund.

Mrs. Robert LeSage

County-Wide Movement to Encourage Interest

Mrs. LeSage, as chairman of the nurse recruitment committee of the Lee County Medical Society's Woman's Auxiliary and of her city's hospital, was among the women who were instrumental in organizing Allied Medical Career Clubs in every

Members of the Allied Medical Career Clubs of Lee County in Illinois on their recent visit to the International Surgeons' Hall of Fame

high school in the county. The clubs now have approximately a hundred and seventy-five members.

Personally Conducted Tour

Mrs. Wilbur Stitzel, president of the Lee County Auxiliary, and Mrs. LeSage personally conducted the girls to Chicago on their visit to the Hall of Fame. Each school group was accompanied by its own sponsor. Four high schools were represented.

The sponsors present were:

Mrs. Phil Haley, Amboy High School

Mrs. Thomas Coldorola, Franklin Grove High School

Mrs. Harold Coss, Dixon High School

Miss Delores Reitz, Ashton High School

The staff of the Surgeons' Hall of Fame was particularly pleased to welcome the Lee County girls and would be pleased to have them come again.

* * *

APPLICATION FOR MEMBERSHIP

I am interested in furthering the program of the Auxiliary to the International College of Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

NAME:

ADDRESS:

Make check payable to The Woman's Auxiliary, United States Section, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Mrs. Louis Plzak, Treasurer

Section News

Regional Conference on Obstetric and Gynecologic Surgery held in São José do Rio Preto

Brazilian Section Rounds Out Year of Activity

The Brazilian Section of the International College of Surgeons, under the presidency of **Prof. Dr. Mario Degni,** has filled the year with constructive activity.

On the organizational level it has systematized its procedures, and its officers have gone to outlying communities to interest surgeons in the work of the College. The Section has cooperated with various groups in presenting discussions and scientific conferences.

The Section organized a comprehensive course on hematology which was given in the Presidente Prudente Region. The College appointed the lecturers and assigned the subjects to be discussed.

The Section also held, through the courtesy of a sponsor, a series of dinners in various districts of São Paulo which enabled the officers personally to meet the local medical men and establish ties of friendship and discuss with them problems of common interest.

Together with the Society for Gastroenterology and Nutrition of São Paulo, the College held a meeting in Bauru June 7-8, 1958, with members of the College among the most important of the essayists.

At another time, Prof. Degni, together with **Prof. Dr. Matheus Santamaria,** president-elect of the Brazilian Section, having traveled to the Region of Campinas on College matters, participated in a scientific program with the Medical and Surgical Society of Campinas.

Participation in Ninth Medical Congress of Central Brazil

The College was invited to present a surgical program at the Ninth Medical Congress of Central Brazil, held September 3-6, 1958, in the city of Goiania. The theme selected was "Cancer of the Cervix of the Uterus." The subjects dealt with and the essayists were:

Scientific Value of Early Diagnosis of Cancer
PROF. DR. LUCAS MONTEIRO MACHADO, F.I.C.S., Belo Horizonte

Early Diagnosis Through Vaginal Scraping
DR. CAETANO GIORDANO, F.I.C.S., São Paulo

Surgical Treatment of Cancer of the Uterus
DR. FRANCIA MARTINS, F.I.C.S.,
São Paulo
Value of Radiotherapy in the Case of Cancer of the Uterus
DR. AMERICO RUFINO, F.I.C.S.,
São Paulo
Cancer of the Uterus and Pregnancy
DR. DOMINGOS ANDREUCCI, F.I.C.S.,
São Paulo

Medical Education Discussed

At the São Paulo Regional Meeting held in São Paulo during November, in addition to the presentation of scientific subjects, serious consideration was given to the problem of medical education, particularly as to the length of the curriculum.

Obstetric and Gynecologic Surgery

The Brazilian Section organized a regional conference on obstetric and gynecologic surgery in the city of São José do Rio Preto on June 26, 1958. Among participants of the conference were Dr. Domingos Delascio, F.I.C.S., Dr. Sylla Orlandini Mattos, F.I.C.S., Dr. José Bonifacio Medina, F.I.C.S., Dr. Onofre de Araujo, F.I.C.S., and Dr. João de Sampaio Góes, F.I.C.S.

Region of Lins Organized

On August 9-10, 1958, the Region of Lins of the Brazilian Section of the International College of Surgeons was formally organized. Members of the Region were presented with their Fellowship diplomas. The following were inducted into office:

Dr. Geraldo Andrade de Carvalho
PRESIDENT

Dr. João Baragati
SECRETARY

Dr. Nestor De Cunto
TREASURER

One of the series of three dinners held in various districts of São Paulo

Dinner in São Jasé do Rio Preto

Wide Range of College Participation

The Brazilian Section organized a scientific meeting in the town of Petropolis with the cooperation of the Regions of Petropolis, Niteroi, Rio de Janeiro and Juiz de Fóra.

In the region of Marilia the subject of conference discussion was the surgeon's part in insuring good hospital management.

Symposium on Ocular Tumors in Honor Dr. J. Penido Burnier

A symposium on ocular tumors was held at the Penido Burnier Institute in Campinas in honor of Dr. J. Penido Burnier. A number of members of the Campinas Region are associated with the Penido Burnier Institute, including **Prof. Dr. Gabriel Oliviera Da Silva Porto, Dr. Antonio Augusto De Almeida, Dr. Manoel Alfonso Ferreira, Dr. João Lech, Jr.,** and **Dr. Raul Guedes De Mello.**

Brazilian Section Sets up Program of Postgraduate Scholarships and Prizes

The Brazilian Section of the International College of Surgeons has set up an extensive program of postgraduate scholarships and prizes in various branches of surgery.

In orthopedics, postgraduate scholarships were made available in the service of **Prof. Define** of the Santa Casa to members of the College both in Brazil and in foreign countries. The scholarships will include board and lodging and a monthly cash allowance.

A similar scholarship is available in urology with **Dr. Matheus Santamaria** at the Santa Casa de Misericordia in São Paulo.

The Section is also offering prizes for original scientific work, including the publication and distribution of the written reports.

* * *

TO PERPETUATE THAT WHICH WE BUILD

Include a gift to the International College of Surgeons among your annual contributions.
Include the International College of Surgeons among the benefactions in your will.

COLOMBIA

Dr. Alberto Vejarano-Laverde, treasurer of the Colombian Section of the International College of Surgeons, is the secretary and active organizer of the monthlong seminar symposium on cardiovascular surgery sponsored by the *Fundación A. Shaio* in Bogotá during July, 1959.

The proceedings will be presented simultaneously both in Spanish and in English.

Definite sessions are to be devoted to:

Pulmonary hypertension
Surgical treatment of congenital cardiopathies
Coronary disease
Valvular diseases
Aneurisms of the aorta and large vessels
Extracorporeal circulation and hypothermy
Correlation of electrocardiography, angiocardiography, and other complementary examinations as diagnostic methods

Dr. Vejarano-Laverde is seeking the widest possible participation by qualified practitioners and advanced students both from Colombia and from abroad. He solicits their questions and suggestions. Letters should be addressed to

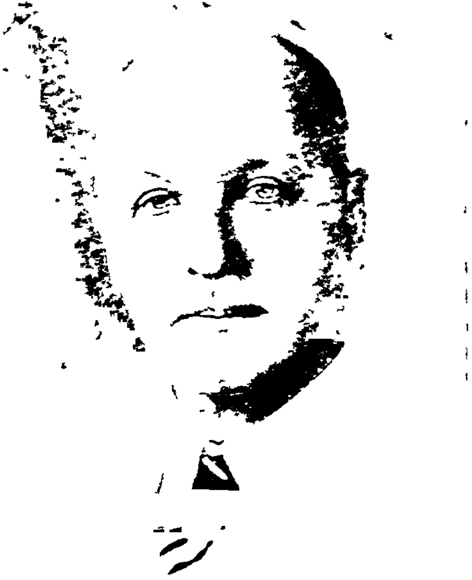
Dr. Alberto Vejarano-Laverde
Fundación A. Shaio, Cra. 13 No. 43-23
Bogotá, Colombia, South America

EL SALVADOR

At a meeting of the El Salvador Section of the International College of Surgeons, held January 16, 1959, the following officers were elected:

PRESIDENT
Dr. Mariano Samayo, F.I.C.S.
VICE-PRESIDENT
Dr. Humberto Escapini, F.A.C.S., F.I.C.S.
SECRETARY
Dr. Antonio Pineda M., F.I.C.S.
TREASURER
Dr. Dimas Funes Hartman, F.I.C.S.

FINLAND



Dr. Juuso Kivimäki
President, Finland Section

Members of the Finland Section of the International College of Surgeons convened for their annual meeting and election of officers in Helsinki on February 6, 1959, with Prof. Dr. A. R. Klossner, F.I.C.S., presiding.

Elected for the coming term of office are:

PRESIDENT
Kivimäki, Juuso, M.D., F.I.C.S., professor of oral surgery at the University of Helsinki
VICE-PRESIDENT
Vara, Peavo, M.D., F.I.C.S., professor of obstetrics and gynecology at the University of Helsinki
SECRETARY
Blomquist, Harry E., M.D., F.I.C.S., lecturer in surgery at the University of Helsinki
TREASURER
Aro, Lauri, M.D., F.I.C.S., lecturer in anesthesiology at the University of Helsinki

FRANCE

Annual Meeting of Section to be held at Lyons June 19-21, 1959

The annual meeting of the French Section of the International College of Surgeons will be held at the Faculty of Medicine in Lyons, June 19-21, 1959.

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A committee of ladies is planning a tour of the museum and several parties for Friday and Saturday.

Prof. Agr. J. Francillon, of Lyons, is the secretary general of the meeting. Correspondence concerning participation should be addressed to **Mlle. Coste**, administrative secretary, 13, place Carnot, Lyon.

INDIA

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Dr. Menon read the minutes of the last general meeting and of the last executive committee meeting and the minutes were confirmed. He then read the annual report of the Section for 1958, after which the hon. treasurer placed before the committee his report on the financial condition of the Section.

The executive committee recommended the following officers for the ensuing term:

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PRESIDENT-ELECT
Dr. B. N. Balakrishna Rao, Gwalior

VICE-PRESIDENTS
Dr. K. G. Munsif, Bombay
Dr. R. H. Betts, Vellore
Dr. M. Krishnamurthi, Vizag
Dr. V. G. Vaishampayan, Sholapu
Dr. B. N. Sinha, Lucknow

HON. SECRETARY
Dr. A. E. deSá, Bombay

HON. TREASURER
Dr. P. K. Sen, Bombay

CREDENTIALS COMMITTEE
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Dr. S. P. Srivastava, Agra

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ITALY

Interesting Meetings in Conjunction with Surgical Societies

The Italian Section of the International College of Surgeons held a meeting in connection with the Sixtieth National Congress of the Italian Surgical Society in Genoa, October 24-26, 1958. The meeting was held at the *Nuovo Lido d'Albaro.*

The Congress opened with great formality. About forty guests of honor were present, including public officials and other persons of high distinction.

At the commemorative service held for deceased members, **Prof. Dr. A. Mario Dogliotti**, F.A.C.S. (Hon.), F.I.C.S. (Hon.), director of the clinic of general surgery at the University of Turin and president-elect of the International College of Surgeons, delivered an eloquent eulogy as a tribute to the memory of Prof. Raffaele Paolucci di Valmaggiore, M.D., F.I.C.S. (Hon.), a former president of the Italian Surgical Society and Prof. Dogliotti's predecessor as president-elect of the International College of Surgeons.

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Medical News Front

AMERICAN GOITER ASSOCIATION TO CONVENE IN CHICAGO

The 1959 meeting of the American Goiter Association will be held at the Drake Hotel, Chicago, April 30-May 2.

The program for the three-day meeting will consist of papers and discussions dealing with the thyroid gland, its physiology, pharmacology, pathology and therapy.

WORLD MEDICAL ASSOCIATION TO MEET IN CANADA

The Canadian Medical Association will be host to the XIIIth General Assembly of the World Medical Association to be convened in Montreal, Canada, September 7-12, 1959.

The tentative program includes:

Medical Editors' Conference
Monday, September 7
Socio-Medical Affairs
Thursday, September 10
Scientific Program
Wednesday, September 9

Additional information relative to the Assembly may be obtained from:

The Secretary General
The World Medical Association
10 Columbus Circle
New York 19, New York

$200,000/$600,000 Limits of Liability are now available to members covered under the ICS Group Malpractice Insurance Plan.

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Director of Advertising for the International College of Surgeons, announces the appointment of three regional representatives for The Journal of the International College of Surgeons to aid in servicing advertisers and their agencies.

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The Research Horizon

GEOGRAPHICAL ASPECTS OF APPENDICITIS

Supplement No. 221 to *Acta Chirurgica Scandinavica,* published in Stockholm, Sweden, reviews recent ethnomedical investigation into the incidence of appendicitis, maps the disease, and attempts to correlate its prevalence with the prevalence of other diseases. The study was conducted by **Sven Müller** and concluded in May 1955.

The study maintains that the peculiar geographic distribution of acute appendicitis—that is, its rare occurrence or entire absence in tropical and subtropical regions—cannot be explained by congenital racial immunity or by differences in diet. Instead, this immunity seems to follow the same immunological laws as operate in other regions. It also seems that it is acquired through atypical, subclinical infections in early childhood. There is striking conformity between the incidence of tonsillitis and appendicitis in many countries. This applies particularly to haemolytic streptococcal tonsillitis (i.e. scarlet fever).

As far as scarlet fever is concerned, climatic conditions are no doubt important. They are also probably significant in the case of appendicitis. But recent changes in the statistics of the incidence of these diseases—as a greater number of natives in tropical and subtropical countries and elsewhere accept Western standards of living—seem to establish that climatic influence cannot be the exclusive reason, and that we must look to immunity acquired by primitive peoples following latent infections during childhood for solution to the problem.

The study concludes with the hypothesis that if such an immunizing infection (perhaps even with haemolytic streptococci) is true also of appendicitis, we have the explanation of all otherwise incomprehensible features of the geography of this disease.

TREATMENT OF VIRAL SYNDROMES WITH A LIPO-PROTEIN-NUCLEIC ACID COMPOUND (RETICULOSE)

Writing in the *Virginia Medical Monthly* (84:347, 1957), **Drs. Robert H. Anderson** and **Ralph M. Thompson.** of Alexandria, Virginia, reported on 5 cases of acute viral infections which were treated at Alexandria Hospital, Alexandria, Virginia, with intramuscular injections of Reticulose, a lipo-protein-nucleic acid complex, after the apparent failure of the usual antibiotics.

According to the authors, immediate improvement was noted clinically and symptomatically.

They stated that Reticulose was well tolerated by all of the five patients and produced no evidence of toxic manifestations or side effects.

In all of the patients they found improvement within twenty-four to thirty-six hours after Reticulose was started, which was manifested by clinical and symptomatic improvement.

Doctors Anderson and Thompson conclude that Reticulose is a definite antiviral substance and should be considered in the treatment of viral infections.

They now report that at the time the above-mentioned article was submitted for publication, several Virginia physicians began the treatment of viral infections with Reticulose, and that now they have a report of 41 cases of viral infections which have responded favorably to this product, these cases including influenza, encephalitis, viral hepatitis, infectious mononucleosis, viral pneumonia, uncomplicated mumps and measles.

In Memoriam

PHILMOUR MURRAY ALEXIS BEIN

M.D., F.I.C.S., D.A.B.

1906-1959

Dr. Philmour M. A. Bein, F.I.C.S., D.A.B., of Mansfield, Ohio, died suddenly, on January 9, 1959, at the Mansfield General Hospital, where he had been staff surgeon since 1936.

Dr. Bein was born in Chicago in 1906, but moved to Mansfield with his parents while a boy. Educated at the Mansfield High School, he was a graduate of the University of Pennsylvania, with the B.S. degree, a member of the class of 1928. Four years later he received his M.D. degree from the University of Pennsylvania Medical School.

He interned at the Philadelphia General Hospital for two years, and served as resident at the Cincinnati Jewish Hospital, Cincinnati, Ohio, from 1934 to 1935.

He returned to Mansfield and opened his surgical practice in 1936.

The same year he became affiliated with the Mansfield General Hospital, where he was lecturer in surgery at the nursing school and chairman of the training program for residents.

Dr. Bein was also on the surgical staffs of the Peoples' Hospital and the Madison Hospital, both in Mansfield.

Dr. Bein was a veteran of four years' service with the Army Medical Corps in World War II, assigned to the Pacific Theatre, and was stationed for a time on Guadalcanal.

He was highly esteemed by his associates and the members of his community. His untimely death took him from the profession which was the very essence of his being and from the service to his fellow man which he considered the purpose of his life.

The officers and members of the board of the College extend to Mrs. Joseph Bein, Dr. Bein's mother, with whom he made his home, and to his brother and his sisters, their very sincere sympathy.

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Vol. 31 APRIL, 1959 No. 4

General Surgery

A Modification of Bassini-Rienhoff's Herniorrhaphy

With Preservation of the Functional Mechanism of the Inguinal Canal

I. KOPEL, M.D., AND B. MARKOWSKI, M.D., F.I.C.S.
BELIZE, BRITISH HONDURAS, CENTRAL AMERICA

INGUINAL hernia is one of the most common conditions confronting the surgeon in the tropics.

Racial Susceptibility.—The existence of an innate racial predisposition to inguinal hernia in Africans would seem to be widely accepted, although this is not so well established as the predilection to umbilical hernia, which is far more common in the African than in any other race. No comparative statistical data can be given, but the impression is that congenital hernia and hydrocoele, as well as imperfectly descended testicles, with hernia or potential hernia, are more common in the predominant African race than in the Spanish-American, European and aboriginal Indian sections of the population of British Honduras. Perhaps, therefore, the racial factor is etiologically important. One could also speculate on a racial factor governing the incidence of the so-called "high internus position," which will be discussed later, and the widening of the space between the conjoined tendon and the inguinal ligament. It would be unprofitable, however,

From the Government Hospital, Belize. [illegible] June [illegible]

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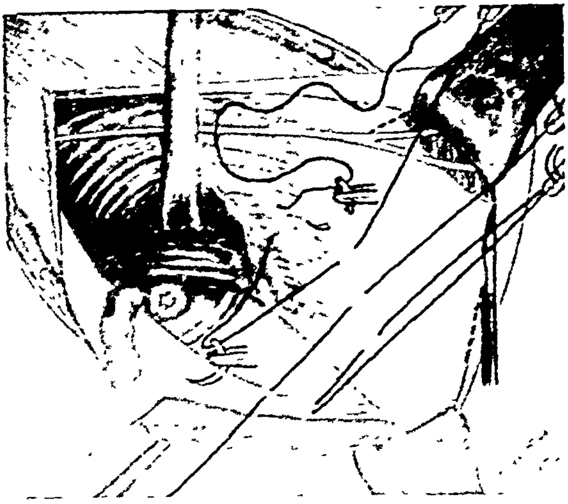
(suitably incised for the passage of the cord) to the transversalis fascia. Such procedures, however, are practicable only in cases of early hernia and not in the presence of a long-standing, large hernia with a wide fixed ring and a permanent structural defect in the posterior wall of the inguinal canal. This defect, as was emphasized by Schmieden, develops in the triangular gap between the lower border of the internal oblique and the transversus abdominis above, the inguinal ligament below and the edge of the rectus medially; here, the posterior wall of the inguinal canal consists only of the parietal peritoneum and the transversalis fascia. The development of the latter is not constant and usually not strong. This triangle becomes progressively wider as the hernia enlarges. A further important factor is the so-called high internus position, that is, the lower borders of the internal oblique and that of the transversus abdominis are almost horizontal and inserted in the rectus sheath about 2 to 4 cm. above the pubic symphysis. This position is observed rather frequently (present in 76 of 100 dissections on cadavers performed by Polya, as cited by Schmieden), and is either primary or secondary, consequent on hernial enlargement.

For a large hernia McVay and Anson advocate suture of the conjoined tendon to the pectineal ligament (Lotheissen's principle of inguinal repair of femoral hernia). They maintain that the Bassini operation is not rational, since the conjoined tendon is normally inserted, with its lowermost fibers, into the pectineal ligament and not into the inguinal ligament. Whether the conjoined tendon normally has a weak attachment to the medial half of the inguinal ligament or not, however, many surgeons prefer Bassini's operation. Not only is the aforedescribed triangle the weak point of the inguinal canal, it is also



The topographic sketch of inguinal canal showing (1) internal oblique and transversus abdominis muscles separated at their lower borders; (2) relaxing incision, and (3) sutures employed in method of herniorrhaphy described.

the "achilles' tendon" of Bassini's operation. The reason for this is that the tension required to close the defect causes either cutting out of the sutures or splitting of the tendinous structures. Even worse, it may cause necrosis and destruction of the muscle fibers strangled in the grasp of the sutures. According to Noetzel (cited by Schmieden), the "high internus position" is the main cause of recurrent hernia; this does not occur through the internal ring as a recurrence of the old indirect hernia but as a new direct hernia that develops through the triangular aperture aforementioned. The fact that this is not entirely correct will be mentioned later. In this connection, however, an important operative measure is the relaxing incision of Rienhoff, also known as Tanner's "slide," in which a vertical incision is made in the anterior sheath of the rectus, as near its medial border as possible, to expose the rectus and pyramidalis. With the aid of this incision relief of tension is obtained, and the conjoined tendon can be brought downward and sutured easily to Poupart's or Cooper's ligament, whichever to theorize on racial factors, which at best are notoriously difficult to trace and to interpret, particularly in a heterogeneous and racially mixed population.

With regard to the choice and decision as to the actual method of operation to be employed for inguinal hernia, the problem is not simple and remains as before, a vexed one.

Functional Anatomic Features, Development Mechanism, Operative Procedures and Other Relevant Points.—It is generally accepted that the main force of the intra-abdominal pressure in the erect or sitting posture is exerted upon the inguinal and femoral canals. This pressure is met by contraction of the abdominal muscles. The arched muscle fibers of the lower border of the internal oblique and transversus abdominis straighten and descend so as to occlude the inguinal canal and buttress the vulnerable posterior wall against the outward thrust of intra-abdominal pressure. Lytle, who has reviewed the functional anatomic aspects of the internal inguinal ring, stressed the importance of preserving the valvelike mechanism normally effected by the divergent movement of the transversus abdominis on contraction and of the fibrous internal ring suspended from its posterior surface, viz. downward, and upward and outward respectively. These movements and the simultaneous apposition of the inner edge of the fibrous ring to the cord, on a rise of intra-abdominal pressure, prevent protrusion through the ring.

After calling attention to the predisposition of the African race to inguinal hernia, the authors outline the anatomic, physiologic and pathologic aspects of the condition, as well as its mechanism of development. Bassini's, McVay and Anson's, and Lytle's operations, Reinhoff's relaxing incision and other pertinent points are discussed. One of the authors has repaired 199 inguinal hernias in five years by the unmodified Bassini-Reinhoff technic, with only 2 recurrences. The other author has devised a method of closing the defect in the posterior wall of the inguinal canal with minimal tension, so that the resulting repair is flexible rather than rigid and the normal contractility of the muscular structures preserved. Seventy-three inguinal hernias have been repaired by this method in one and one-half years, with no recurrences up to the time of writing.

The mobility of the internal ring is lost by stitching the free edge of the internal oblique and transversus abdominis and their conjoined tendon to the inguinal ligament as in Bassini's operation. Lytle confines himself, therefore, to narrowing the fibrous internal ring by suturing together the edges of its margins after removal of the sac. Removal of the sac alone may be all that is necessary for small congenital indirect hernia in infants, children and adolescents with otherwise normal structures. The natural valvular mechanism of the internal ring recovers its normal function. It is obvious that simple herniotomy and Lytle's operation have a limited application.

On occasion, if the transversalis fascia is strong enough, it may be possible to strengthen the posterior wall of the inguinal canal by plication or suture of the transversalis fascia to the inguinal ligament. This may be further reinforced by suturing over the medially detached and dissected cremaster and/or the lower flap of the split external oblique aponeurosis (suitably incised for the passage of the cord) to the transversalis fascia. Such procedures, however, are practicable only in cases of early hernia and not in the presence of a long-standing, large hernia with a wide fixed ring and a permanent structural defect in the posterior wall of the inguinal canal. This defect, as was emphasized by Schmieden, develops in the triangular gap between the lower border of the internal oblique and the transversus abdominis above, the inguinal ligament below and the edge of the rectus medially; here, the posterior wall of the inguinal canal consists only of the parietal peritoneum and the transversalis fascia. The development of the latter is not constant and usually not strong. This triangle becomes progressively wider as the hernia enlarges. A further important factor is the so-called high internus position, that is, the lower borders of the internal oblique and that of the transversus abdominis are almost horizontal and inserted in the rectus sheath about 2 to 4 cm. above the pubic symphysis. This position is observed rather frequently (present in 76 of 100 dissections on cadavers performed by Polya, as cited by Schmieden), and is either primary or secondary, consequent on hernial enlargement.

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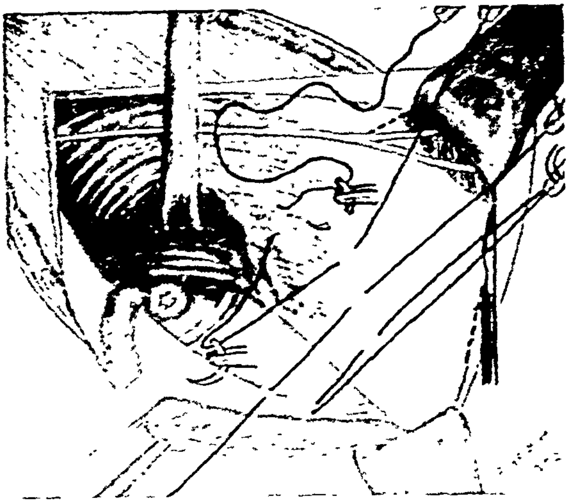

The topographic sketch of inguinal canal showing (1) internal oblique and transversus abdominis muscles separated at their lower borders; (2) relaxing incision, and (3) sutures employed in method of herniorrhaphy described.

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The type of large indirect hernia is sometimes difficult to determine, owing to the fact that the internal ring is dislocated inward by the downward-expanding neck of the hernial sac, together with the inferior epigastric vessels. The inguinal ring thereby comes to lie opposite the external ring, thus simulating a direct hernia. The majority of recurrent hernias are indirect. In those which at first sight appear to be direct, involvement of the internal ring discloses their true nature. Bulging of the peritoneum and intraversalis fascia between the fibrous internal ring and the inferior epigastric vessels with medial displacement of the latter, is also a frequent concomitant observation in the presence of indirect hernia. A combined, double or so-called "pantaloon" or "saddle-bag" type of hernia may, however, result, with a sac on either side of the inferior epigastric vessels. This may be dealt with by transposition, i.e., inversion and withdrawal of the direct sac underneath the inferior epigastric vessels in the indirect sac, the two being converted into one by Hoguet's maneuver.

Sliding hernia *(hernie par glissement)*, in most cases, can be dealt with simply by restitution of the bowel—or the bladder, if there is true sliding hernia of this organ —into the abdomen by a deliberate *réduction en masse* and closure of the peritoneal opening by a purse-string suture.

During a five-year period, 199 inguinal hernias were repaired by one of us (B.M.), who practiced the aforedescribed relaxing rectus sheath incision of Rienhoff and suture of the conjoined tendon to the inguinal ligament by Bassini's method. In this series only 2 recurrences are known to have occurred, a result that bears witness to the eminent efficiency of the method.

In a series of 73 cases reported by one of us (D.K.) there were 56 cases of "pure" indirect hernias (76.7 per cent), and 4 of "pure" direct hernias (5.47 per cent). Nine were bilateral and were operated on in one session; 1 was ipsilateral inguinal and femoral (both repaired inguinally, by suturing the lower extremity of Poupart's ligament to Gimbernat's ligament and the pectineal fascia, and then by the method to be described); 2 were cecal sliding hernias; 1 a vesicular sliding hernia; 2 "saddle-bag" hernias, and 2 recurrent hernias previously operated on elsewhere, the Bassini-Rienhoff method of repair, modified as follows, was employed.

Technic.—The medial flap of the incised external oblique aponeurosis is retracted and separated, as near to the linea alba as possible, by blunt dissection from the internal oblique aponeurosis, forming here the anterior rectus sheath. The latter is then incised generously lengthwise at the line where it is inseparably blended with the linea alba. To obtain additional relaxation of tension, the upper end of this incision may have to be prolonged for a short distance laterally across the fibers of the rectus sheath, which gives the complete incision the shape of an inverted L. The mobilized anterior rectus sheath (and consequently the conjoined tendon) is sutured; not, however, by its free edge as in Bassini's operation, but as follows: A series of interrupted sutures of braided silk is passed superficially in Lembert's inverting manner through the surface of the aponeurosis of the internal oblique, approximately where it crosses the lateral edge of the rectus muscle, and then as simple looped stitches from within outward, around the inner edge of the inguinal ligament (see illustration). The sutures, previously clipped with hemostats, are tied after all have been inserted, whereupon the fibromuscular edge rolls inward.

In this way the defect in the inguinal canal is closed snugly and safely without undue tension; extra reinforcement is provided by the rolled-in conjoined tendon, and its edge is left free and mobile. In our operation with this method of apposition the repair is effected without anchoring the transversus abdominis and internal oblique completely. That is, the downward movement of the lower border on contraction, which acts as a natural barrier against protrusion through the ring and safeguards the posterior wall of the inguinal canal during strain, is still possible; thus the result is a flexible repair, in contradistinction to the rigid repair obtained by other methods. Furthermore, the normally active muscular contractions of this region will prevent the unattached musculotendinous border from becoming adherent and immobile during the immediate postoperative period. Final cicatrization will be followed by readaptation, and the retentive function of the repaired fibromuscular apparatus of the inguinal canal will thus be restored with as little impairment as possible.

Additional Procedures.—In this series, when the fibrous internal ring was unduly enlarged it was reduced as follows: The margins were dissected free and held by mosquito or Allis forceps. The edges were then stitched together below the cord with interrupted mattress sutures of fine chromic catgut so as to overlap the medial on the lateral edge. If the lateral rim of the ring is thin and easily frayed, repair and closure can be effected by a transverse darn.

As an extra reinforcement, in 9 cases of indirect hernia in which the cremaster was particularly well developed, as it frequently is in such cases, it was possible to dissect it completely from the neck of the sac and, using mattress sutures of chromic catgut, to suture the resulting strong muscle sheet snugly to the transversalis fascia in the angle between the internal oblique and the rectus, a modified Brenner's procedure (Schmieden).

In most cases the repair has been performed under the cord, so that it rests upon the reconstructed layer. The external oblique aponeurosis is then closed over the cord, by imbrication of the upper flap over the lower, with a double row of widely spaced interrupted chromic catgut or silk sutures, i.e., Woelfler's method (Schmieden).

There was no recurrence in the 73 cases in which repair was accomplished by this method up to an average follow-up period of eighteen months.

Unless the musculotendinous structures of the inguinal canal have completely given way and become permanently incompetent and irreparable so as to make the outlook of any operation unpromising, which was not the case in this series, the method of repair here described is at least as expedient as other more elaborate and less physiologic ones. Admittedly, the series is small and only short-term results are available, and the final proof must be left to the test of time; nevertheless, it seems that a description of the technic in a brief report is warranted.

RESUMEN

En esta comunicación se someten a breve discusión los puntos siguinientes: La predisposición racial de las gentes de descendencia africana a la hernia inguinal; los principios pertinentes a la anatomia funcional del canal inguinal, así como el mecanismo de producción de las hernias de dicha región; los procederes operatorios según Bassini, McVay, Añson el de Lytle, asícomo la incisión de Rienhoff con objecto de producir liberación y relajamiento de la

hojo anterior de la vaina del m. recto del abdomen; y otros puntos que vienen al caso.

Se repararon (por Markowski) 199 hernias inguinales en pacientes de origen predominantemente africano, según el método no modificado Bassini-Rienhoff, con, únicamente, dos reproducciones conocidas durante el lapso de cinco años.

Se describe un método (ideado por Kopel) según el cual se practica una inción relajodora en la hoja anterior de la vaina del m. recto del abdomen a lo largo de la línea de fusión de las aponeurosis de los ms. oblicuo mayor y menor con la línea alba. Se cierra el defecto de la pared posterior del canal inguinal con el mínimo de tensión mediante la sutura de la aponeurosis del m. obicuo menor, en el punto donde cruza el borde lateral del m. recto del abdomen, al ligamento inguinal, efectuando así una reconstrucción flexible y segura. Se cree que al dejar, por este método, el margen fibro-muscular aproximado pero libre y móbil consérvase la contractibilidad normal de las estructuras musculares del conducto inguinal. Esto es esencial si se quiere lograr un mecanimo valvular eficiente contra la protrusión a través del anillo inguinal interno, así como también una barrera de sostén acolchada a través del hiato en la pared abdominal del canal inguinal. Se repararon con este este proceder 73 hernias inguinales en enfermos predominantemente africanos y durante el transcurso de año y medio de control post-operatorio no se presentó una sola reproducción hasta la fecha.

Se tomaron, además, las siguinientes medidas (Kopel): El ensanchamiento del anillo inguinal interno fibroso se corrigió con el estrechamineto de la apertura por debajo del cordón espermático. Cuando se contó con un m. cremáster sólido, se suturóeste a la fascia transversal, a modo de un dique adicional de refuerzo, con prioridad a la herniorrafia anteriormente señalada.

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Discute a predisposição racial dos Africanos para a hernia inguinal; os principios da anatomia funcional do canal inguinal e o mecanismo das hernias; as tecnicas de Bassini, McVay, Anson e Lytle; a incisão de Reinhoff e demais topicos do assunto. Em cinco anos operou 199 africanos (Markowski) pelo método Bassini-Reinhoff com apenas duas recidivas.

O A. descreve um método em que faz uma incisão relaxadora na bainha do reto anterior ao longo da linha de fusão das aponeuroses do obliquo interno e externo na linha alba, fechando o defeito da parede posterior do canal inguinal comtensão mínima, sutura da aponevrose do obliquo interno na porção onde cruza a margem do reto. Consegue assim um reforço flexivel e seguro. Acha o A. que êsse método preserva a contractilidade normal da musculatura o que considera essencial para um mecanismo valvular que se oponha á protrusão pelo anel ingui nal interno e uma barreira contra o hiato natural da parede abdominal. Por este método operou 73 pacientes em um ano e meio sem recidiva. Medidas adicionais foram utilisadas (Kopel): Alargamento do anel inguinal interno: sutura do cremaster a aponevrose transversalis quando este muculo é forte antes de realizar a herniorafia descrita.

ZUSAMMENFASSUNG

Die rassenmässige Prädisposition zur Leistenhernie innerhalb der afrikanischen Bevölkerung, die Grundzüge der funktionellen Anatomie des Leistenkanals, die Entwicklung des Mechanismus der Leistenhernie, die Operationen von Bassini, McVay und Anson und von Lytle, der Entspannungsschnitt von Rienhoff und andere wichtige Fragen werden kurz erörtert.

Innerhalb von fünf Jahren wurden 199 Leistenbrüche an Kranken von vorwiegend afrikanischer Abstammung nach der unmodifizierten Bassini-Rienhoffschen Methode operiert (Markowski), bei denen nur zwei Rückfälle beobachtet wurden.

Es wird ein (von Kopel entwickeltes) Verfahren beschrieben, bei dem nach einem Entspannungsschnitt in der vorderen Rektusscheide entlang der Linie, wo die Aponeurosen des inneren und äusseren schrägen Bauchmuskels in die Linea alba verschmelzen, der Defekt in der hinteren Wand des Leistenkanals mit geringster Spannung geschlossen wird, indem die Aponeurose des inneren Schrägmuskels, *wo sie den seitlichen Rand des Rektus* kreuzt, an das Lig.inguinale angenäht wird. Dies führt zu einer geschmeidigen und zuverlässigen Reparatur. Der Verfasser glaubt, dass auf diese Weise die normale Kontraktionsfähigkeit der Muskelgebilde des Leistenkanals in hohem Masse erhalten wird, da der zwar angenäherte aber doch noch freie fibromuskuläre Rand beweglich geblieben ist. Dies ist wesentlich, wenn man einen zuverlässigen Klappenmechanismus, der einer Ausstülpung durch den inneren Ring entgegen wirkt, und eine elastische Barriere über dem Hiatus in der Bauchwand des Leistenkanals schaffen will. Mit diesem Verfahren wurden 73 Leistenbrüche bei Kranken von vorwiegend afrikanischer Abstammung operiert, und innerhalb von anderthalb Jahren ist bis zur Zeit der Niederschrift dieses Berichts kein Rückfall bekannt geworden.

Ausserdem bediente sich Kopel der folgenden Massnahmen: die Erweiterung des fibrösen inneren Ringes wurde durch Verengung der Öffnung unterhalb des Samenstranges behandelt. Wenn ein starker M.cremaster vorhanden war, so wurde er vor Ausführung der oben beschriebenen Operation als besondere Verstärkung an die transversale Faszie angenäht.

RÉSUMÉ

L'auteur discute brièvement, entre autres: la prédisposition raciale de la population Africaine à la hernie inguinale; les principes fondamentaux de l'anatomie fonctionnelle du canal inguinal et le mécanisme de la hernie inguinale; les opérations de Bassini, McVay et Anson, et Lytle; l'incision libératrice de Rienhoff.

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Il décrit une méthode personnelle: après une incision libératrice dans la gaîne antérieure droite le long de la ligne de jonction des aponévroses des obliques internes et externes de la ligne blanche, la lésion de la paroi postérieure du canal inguinal est fermée avec un minimum de tension, par une suture de l'aponévrose oblique interne au niveau où elle aborde le grand droit, au ligament inguinal. Le bord fibromusculaire rapproché et cependant libre étant maintenu mobile, la contractibilité normale des structures musculaires du canal inguinal est largement préservée; ceci essentiel en vue d'un bon fonctionnement valvaire s'opposant à la protrusion à travers l'orifice postérieur et de l'obtention d'une barrière de rétention élastique au-dessus de l'hiatus dans la paroi abdominale du canal inguinal. 73 hernies inguinales ont été opérées selon cette méthode en un an et demi (malades d'origine Africaine pour la plupart), sans récidive à ce jour.

L'auteur complète sa technique par l' élargissement de l'orifice fibreux interne. Lorsque le crémastérien est bien développé, il est préalablement fixé au fascia avant l'opération décrite, ce qui procure un renforcement supplémentaire.

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Congenital Posterolateral Diaphragmatic Hernia

Pathogenesis and Treatment

VIRUL KAO BORISUTI, M.B.
AND
SMARN MUNTARBHORN, M.B.B.S. (Lond.), F.R.C.S. (Eng.), F.I.C.S.
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A boy and a girl, 6 and 9 days old respectively, with left posterolateral diaphragmatic hernia, were operated on and recovered, with full expansion of the left lung.

In both, dextrocardia and malrotation were the unfailing accompaniments; in the boy, pectus excavatum was also present.

The thoracic approach has the advantage of revealing the condition of the herniated viscera, the lung and the sac if there is one. There was none in the authors' cases.

Diagnostic points included a clinically absent heart murmur, dyspnea, cyanosis, and dextrocardia. Roentgen signs include thoracic intestine, collapse of the lung and dextrocardia.

In Chulalongkorn Hospital congenital posterolateral diaphragmatic hernia is a rarity, considering the annual rate of 10,000 deliveries in the obstetrics department during the past five years. The 2 infants whose cases are here reported, operated on the age of 6 and 9 days respectively, were brought in from outside, and the success of the operation was a compliment to the exact diagnosis by the radiologist.

It is discouraging to read through the writings of many pediatricians and surgeons, for the infants born with this abnormality died early and the operation for correction carried a high mortality rate, partly because of associated anomalies such as hypoplasia of the lung, septal defect, spina bifida, polycystic kidney and, invariably, malrotation of the intestine. Potter[1] stated that only 1 infant born at Chicago Lying-in Hospital lived more than six hours. Bowers, McElin, and Dorsey[2] reported from the Evanston Hospital that 9 of 13 infants born with diaphragmatic hernia died within 2 hours of birth; the remaining 4 were operated on, and only 1 survived. From the Indiana University Medical Center, Moore, Battersby, Roggenkamp and Campbell[3] reported 16 cases of congenital posterolateral diaphragmatic hernia in which the infants were under 90 hours of age. In 13 the condition was diagnosed clinically and in 3 at autopsy. The 13 infants were operated on, and only 8 survived (40 per cent mortality). Campanale and Rowland[4] pointed out the critical association of hypoplasia of the lung with posterolateral diaphragmatic hernia and reported 5 cases, in which all of the infants died. Gross[5] reported a mortality rate of 13 per cent for 82 such hernias.

REPORT OF CASES

CASE 1.—A boy 6 days old, one of [illegible] in a family, with a birth weight of 2.75 Kg., was

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Submitted for publication March 28, 1958.

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The Anatomy Lesson of Professor Frederick Ruysch, by Adriaan Backer. This artist was born in Amsterdam in 1643. He was sent to Italy when young and acquired a taste and correctness of design not very common in Dutch artists. An interesting contrast can be made between the Anatomy Lesson of Professor Ruysch and Rembrandt's Anatomy lesson of Professor Tulp reproduced on p. 463 of this issue of the *Journal.* In Rembrandt's picture the demonstrator and the pupils are concentrating on the dissection, which adds greatly to the reality and the beauty of this famous painting: in Backer's picture all are primarily concerned in posing for their portraits. In Backer's painting the beauty of the hands of the Professor and those of all his pupils are especially noticeable. The position of the cadaver is fantastic, but the depiction of the surface anatomy is accurate and masterful. *(Reproduced by Courtesy of the Rijksmuseum, Amsterdam, The Netherlands.)*

—Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)

Congenital Posterolateral Diaphragmatic Hernia

Pathogenesis and Treatment

VIRUL KAO BORISUTI, M.B.
AND
SMARN MUNTARBHORN, M.B.B.S. (Lond.), F.R.C.S. (Eng.), F.I.C.S.
BANGKOK, THAILAND

IN Chulalongkorn Hospital congenital posterolateral diaphragmatic hernia is a rarity, considering the annual rate of 10,000 deliveries in the obstetrics department during the past five years. The 2 infants whose cases are here reported, operated on the age of 6 and 9 days respectively, were brought in from outside, and the success of the operation was a compliment to the exact diagnosis by the radiologist.

A boy and a girl, 6 and 9 days old respectively, with left posterolateral diaphragmatic hernia, were operated on and recovered, with full expansion of the left lung.

In both, dextrocardia and malrotation were the unfailing accompaniments; in the boy, pectus excavatum was also present.

The thoracic approach has the advantage of revealing the condition of the herniated viscera, the lung and the sac if there is one. There was none in the authors' cases.

Diagnostic points included a clinically absent heart murmur, dyspnea, cyanosis, and dextrocardia. Roentgen signs include thoracic intestine, collapse of the lung and dextrocardia.

It is discouraging to read through the writings of many pediatricians and surgeons, for the infants born with this abnormality died early and the operation for correction carried a high mortality rate, partly because of associated anomalies such as hypoplasia of the lung, septal defect, spina bifida, polycystic kidney and, invariably, malrotation of the intestine. Potter[1] stated that only 1 infant born at Chicago Lying-in Hospital lived more than six hours. Bowers, McElin, and Dorsey[2] reported from the Evanston Hospital that 9 of 13 infants born with diaphragmatic hernia died within 2 hours of birth; the remaining 4 were operated on, and only 1 survived. From the Indiana University Medical Center, Moore, Battersby, Roggenkamp and Campbell[3] reported 16 cases of congenital posterolateral diaphragmatic hernia in which the infants were under 90 hours of age. In 13 the condition was diagnosed clinically and in 3 at autopsy. The 13 infants were operated on, and only 8 survived (40 per cent mortality). Campanale and Rowland[4] pointed out the critical association of hypoplasia of the lung with posterolateral diaphragmatic hernia and reported 5 cases, in which all of the infants died. Gross[5] reported a mortality rate of 13 per cent for 82 such hernias.

REPORT OF CASES

CASE 1.—A boy [illegible] days old, one of [illegible] in a family, with a birth weight of 2.75 Kg., was

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Submitted for publication March 28, 1958.

Fig. 1 (*Case 1*).—Plain film (*left*) and film tak
with dextrocardia. In left pleural cavity were s
of colon, but neith

brought in with dyspnea, cyanosis and restlessness. The temperature was 37.2 C., th
pulse rate 110 and the respiratory rate 4
The white cell count was 14,200 per cubi
millimeter of blood. There was pectus e.
cavatum, and the abdomen was flat. Roentg
study showed collapse of the left lung, d
trocardia, the aortic arch on the right
the trachea and intrathoracic intestine.

Thoracotomy was [illegible] on the si.
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The hernial orifice
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mal. The chest was drained for three days. There was no hernial sac.

The child made an uneventful recovery and was discharged on the seventh day.

Comment.—The appearance of the orifice was similar to that in case 1: oval, 2.5 by 3 cm. and separated from the posterior thoracic wall by a 2 cm. band of diaphragmatic musculature.

Diagnosis.—Bearing in mind the possibility of congenital abnormality in the newborn, one ought to make investigations of the alimentary and respiratory systems if there are signs of difficulty in breathing and swallowing. Indeed, in the absence of congenital heart disease, dyspnea and cyanosis should indicate interference with the lung function, i.e., inexpansibility or collapse.

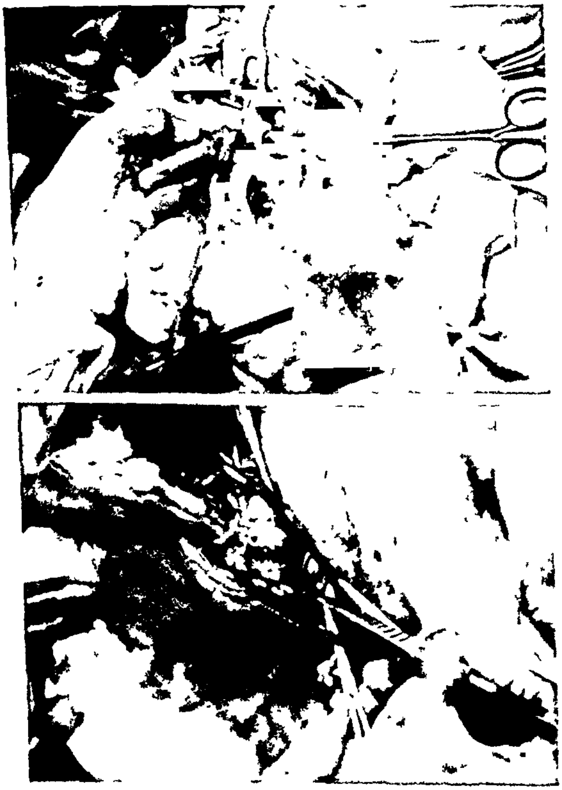

Fig. 2.—*Above*, surgeon's middle finger inserted through incision at periphery of diaphragm and through hernial orifice (thoracic intestine). *Below*, separation of hernial orifice from posterior abdominothoracic wall with band of muscular tissue (pleuroperitoneal folds). Intestine replaced in abdomen.

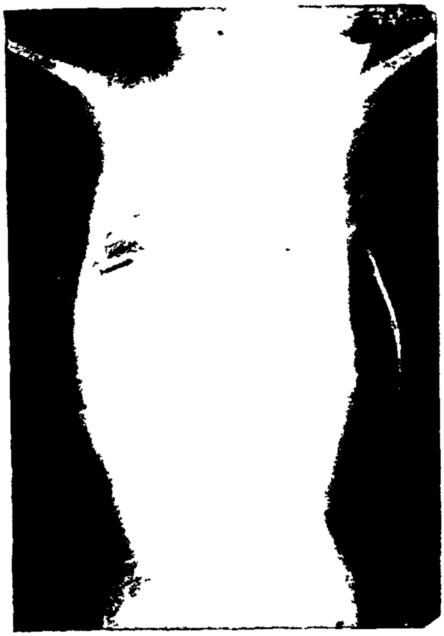

Fig. 3.—Good lung expansion after operation.

Clinically, congenital posterolateral diaphragmatic hernia is diagnosed by the signs of dyspnea, cyanosis and dextrocardia.[4] The heart sounds are best heard on the right side, owing to the mediastinal shift to the right. By listening on the left one may hear the peristaltic sound. Often there are many other associated abnormalities, such as pectus excavatum and a right-sided aorta as in our first case.

Roentgenographic study is an essential adjunct to the exact diagnosis, for the plain film alone will show the collapse of the lung and the mediastinal shift to the right producing secondary dextrocardia.

Coils of intestine are seen on the plain film: in both cases here presented these were beautifully differentiated from cysts and pulmonary abscesses by the presence of barium in them.

Management.—The ideal undertaking is to operate early, in order to put back the structures in their proper locations and allow the lung to expand. Our 2 patients

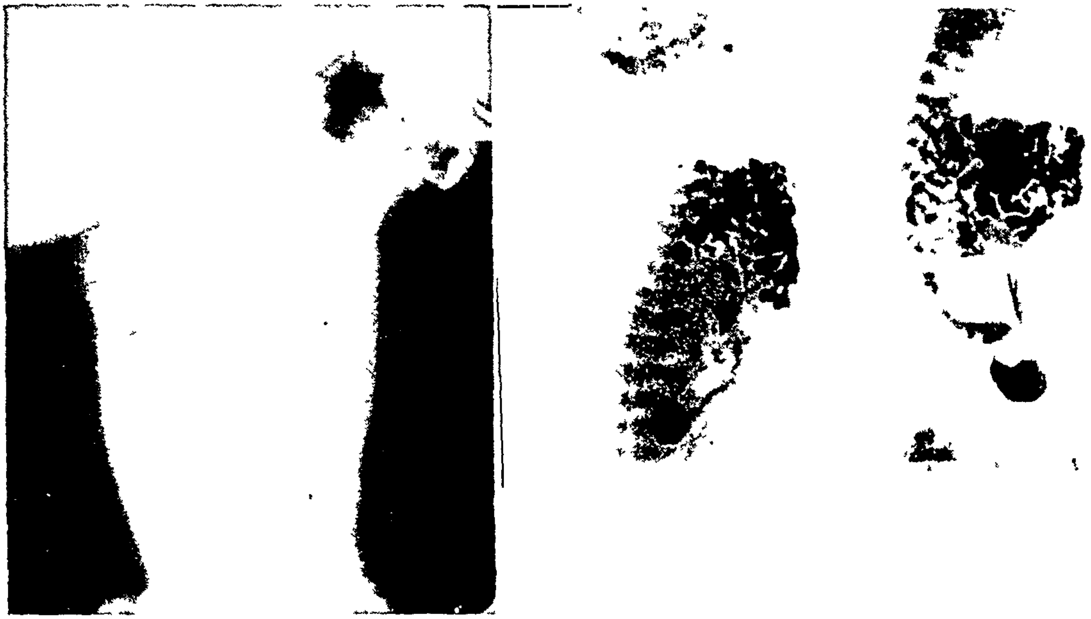

Fig. 1 (*Case 1*).—Plain film (*left*) and film taken after barium meal (*right*) of boy 4 days old, with dextrocardia. In left pleural cavity were small intestine and ascending and transverse portions of colon, but neither spleen nor stomach.

brought in with dyspnea, cyanosis and restlessness. The temperature was 37.2 C., the pulse rate 110 and the respiratory rate 42. The white cell count was 14,200 per cubic millimeter of blood. There was pectus excavatum, and the abdomen was flat. Roentgen study showed collapse of the left lung, dextrocardia, the aortic arch on the right of the trachea and intrathoracic intestine.

Thoracotomy was performed on the sixth day, through the left ninth rib, when the child had become severely cyanotic with a respiration rate of 60 per minute. The left lung was collapsed, and coils of jejunum, ileum, cecum-appendix, ascending colon, and transverse colon were in the pleural cavity. The stomach and spleen remained in the abdomen, being fixed in the normal position.

The hernial orifice was elliptic and measured 2.5 by 3 cm. It was situated on the left of the central tendon, being separated from the posterior thoracoabdominal wall by 2 cm. of the diaphragmatic muscular tissue. An incision (4 cm.) was made along the costal attachment of the diaphragm in order to enter the abdominal cavity, and when the hernial orifice was enlarged toward this incision the herniated contents could be easily replaced into the abdomen. The midgut had obviously not gone through the process of normal rotation. The cut edges of the diaphragm were sutured and the hernial orifice closed with interrupted silk. The phrenic nerve was intact. There was no hernial sac. Drainage was maintained for three days. The child made a good recovery and was discharged thirteen days later.

CASE 2.—A girl 8 days old, one of a family of 7, was admitted with a history of 3 days of dyspnea, cyanosis and inability to take food. The temperature was 104 F., the pulse rate 120 and the respiratory rate 30. There was a flat abdomen, and crepitations were present in the left side of the chest. Roentgen study showed intrathoracic intestine, dextrocardia and abdominal stomach.

The child was operated on on the ninth day through the ninth intercostal space. The left lung was collapsed; the heart was displaced to the right, and coils of jejunum, ileum, cecum-appendix, ascending colon, and transverse colon constituted the herniated contents. An incision was made through the costal attachment of the diaphragm and the hernial orifice was enlarged, after which the herniated structures could easily be replaced into their respective locations. The cut edges were sutured, and the orifice was closed with interrupted silk. The phrenic nerve was normal. The chest was drained for three days. There was no hernial sac.

The child made an uneventful recovery and was discharged on the seventh day.

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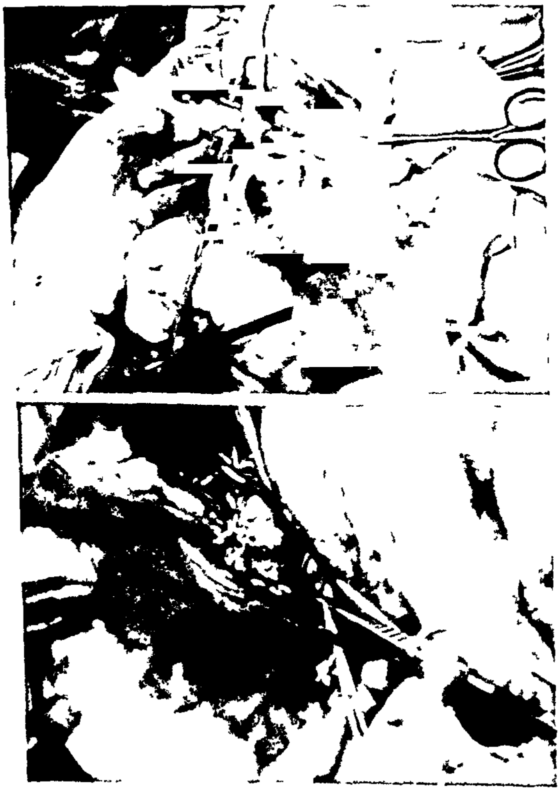
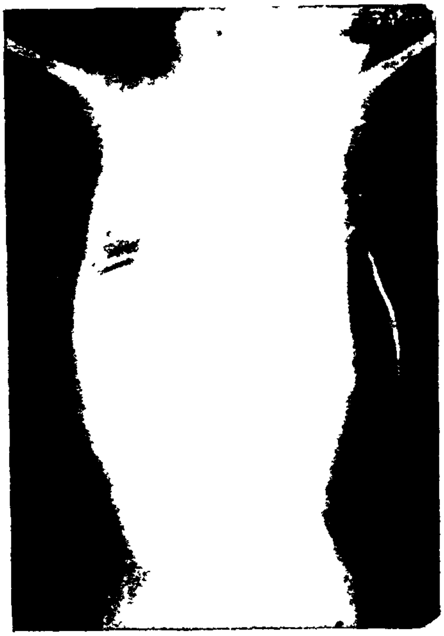


Fig. 2.—Above, surgeon's middle finger inserted through incision at periphery of diaphragm and through hernial orifice (thoracic intestine). *Below*, separation of hernial orifice from posterior abdominothoracic wall with band of muscular tissue (pleuroperitoneal fold). Intestine replaced in abdomen.



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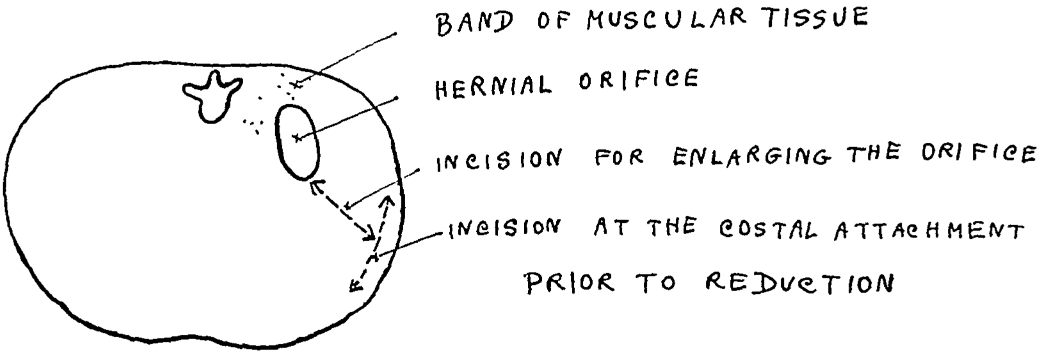
BAND OF MUSCULAR TISSUE
HERNIAL ORIFICE
INCISION FOR ENLARGING THE ORIFICE
INCISION AT THE COSTAL ATTACHMENT
PRIOR TO REDUCTION

Fig. 4.—Upper surface of diaphragm.

must have been very tolerant to anoxia, as they were rather cyanotic at operation on the sixth and the ninth day respectively. The thoracic incision through the ninth interspace has the following advantages over the abdominal:

1. It accomplishes full exposure of the herniated intestine, and one is able to assess the viability thereof before replacement: the condition of the lung is also studied, with a view to mild inflation under direct vision. Displacement of the heart is also observable.

2. Drainage of the pleural space to a tube under water encourages expansion of the lung by virtue of the negative pressure.

Replacement of the herniated structures into the abdomen is easily done if a peripheral incision is made through the costal attachment of the diaphragm and if the orifice is closed toward this incision. Incisions of this type are restitched, and the orifice is closed with interrupted silk.

Pathogenesis.—In our 2 cases of posterolateral diaphragmatic hernia, the fol-

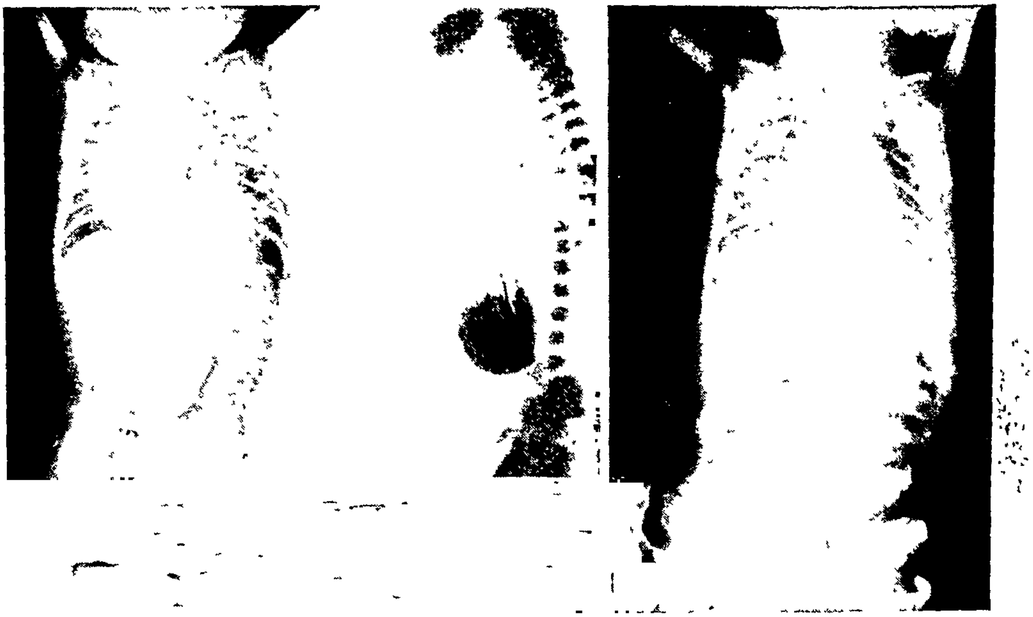

Fig. 5 (*Case 2*).—*Left*, girl 8 days old, with dextrocardia, thoracic intestine and abdominal stomach. *Right*, good lung expansion after operation.

lowing abnormalities were present.

1. The jejunum, the ileum, the ascending colon and the transverse colon were all intrathoracic. The stomach and the spleen remained intact.

2. The hernial orifices were not in contact with the posterior thoracoabdominal wall, being separated therefrom by muscular tissue, 2 to 3 cm. wide, belonging to the posterior costal attachment of the diaphragm. The phrenic nerve was intact. The aforementioned band of muscular tissue represented the ingrowth of the diaphragmatic element derived from the body wall, covered by the serous membrane of the pleuroperitoneal fold. It was responsible for the closure of the posterior half of the pleuroperitoneal canal, the anterior half remaining patent as the hernial orifice.

3. The left lung was not hypoplastic. Companale and Rowland[1] pointed out that in their cases hypoplasia was due to very early herniation through the pleuroperitoneal canal and was regarded as a fatal accompaniment of the hernia. In our 2 cases expansion of the lung was good after the operation, as may be seen from the roentgen appearance, and it is likely that herniation took place late in fetal development. The left lung had developed and was collapsed by the herniation; full expansion was therefore achieved in the postoperative period. The time of onset of herniation is therefore a highly significant factor in determining the prognosis; the later in fetal life herniation occurs, the better the prognosis.

COMMENT

As has been stated, many infants with this condition die within a few hours of birth. The early demise is mostly due to associated abnormalities, notably pulmonary hypoplasia. In cases in which the lung has fully developed, the collapse consequent upon the herniation is a reversible process; this is why our 2 patients survived the six and nine days. Of course, they were rather cyanotic, and there should be a limit to the time taken for the investigations.

RÉSUMÉ

Description de deux cas (garçon âge de 6 jours, fille de 9 jours) de hernie diaphragmatique postérieure latérale gauche avec dextrocardie et rotation, s'accompagnant chez le premier d'un thorax creux. Guérison post-opératoire complète avec capacité d'expansion totale du poumon gauche.

La voie thoracique présente l'avantage de révéler l'état du viscère hernié, du poumon, et du sac s'il y en a un (absence de sac dans les cas de l'auteur).

Symptômes cliniques: absence de bruit cardiaque, dyspnée, cyanose, dextrocardie. Signes radiologiques: intestin intrathoracique, collapsus pulmonaire et dextrocardie.

RIASSUNTO

Vennero operati un bambino e una bambina rispettivamente di sei e di nove anni per un'ernia diaframmatica posterolaterale. Guarirono e si ottenne una completa riespansione del polmone. In entrambi vi era destro-cardia e malrotazione intestinale; nel bambino vi era anche un torace a imbuto.

La via toracica ha il vantaggio di mostrare la situazione dei visceri erniati, del polmone e del sacco (se c'è). Nei due casi presentati non vi era sacco.

I sintomi sono rappresentati dalla dispnea, dalla cianosi, dalla destrocardia e, radiologicamente, dalla presenza di intestino in torace, dal collasso polmonare e dall'abnorme situazione del cuore.

RESUMEN

Un niño y una niña, de 6 y 9 días respectivamente, con hernia diafragmática posterolateral izquierda, fueron opera-

dos, y sanaron con expansión completa del pulmón correspondiente.

Ambos casos iban acompañados de dextrocardia y malrotación; el niño tenía también "pectus excavatum."

La vía quirúrgica tiene la ventaja de permitir la observación de las vísceras herniadas, el corazón y el saco cuando existe. No había saco en ninguno de los dos casos.

Entre los signos diagnósticos se incluyen la falta de murmullo cardiaco, la disnéa, la cianosis y la dextrocardia. Radiológicamente se aprecia intestino torácico, colapso pulmonar y dextrocardia.

SUMÁRIO

Um menino e uma menina de seis e nove anos respectivamente com hernias póstero-laterais diafragmáticas esquerdas foram operados com sucesso, obtendo-se expansão completa do pulmão esquerdo.

Em ambos dextrocardia e má rotação eram acompanhantes infalíveis; o menino também apresentava peito excavado.

O acesso torácico apresenta a vantagem de revelar a condição da víscera herniada, o pulmão e o saco se existir um. Nos casos do autor não havia saco herniãrio.

Pontos diagnósticos: ausencia de sopros cardíacos clínicamente, dispnea, cianose e dextrocardia. Sinais radiográficos incluem intestino torácico, colapso pulmonar e dextrocardia.

ZUSAMMENFASSUNG

Ein Junge und ein Mädchen im Alter von sechs bzw. neun Jahren mit einem linksseitigen posterolateralen Zwerchfellbruch wurden operiert und unter völliger Ausdehung der linken Lunge geheilt.

In beiden Fällen bestand Dextrokardie und anomale Rotation, der Junge wies ausserdem eine Aushöhlung des Brustkorbes auf.

Der thorakale Zugang hat den Vorteil, dass man den Zustand der durchgebrochenen Eingeweide, der Lunge und des Bruchsackes, sofern ein solcher vorhanden ist, beurteilen kann. Die beiden Fälle des Verfassers wiesen keinen Bruchsack auf.

Zu den diagnostischen Merkmalen gehören das Fehlen von Herzgeräuschen und der Nachweis von Atemnot, Zyanose und Dextrokardie. Röntgenologisch werden Darmsegmente im Brustkorb, Lungenkollaps und Dextrokardie gefunden.

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* * *

Harvey returned to England thoroughly imbued with the anatomic teachings of Padua and Galileo's deductions on the movements of the heavenly bodies. Two themes were constantly to revolve in his mind in the years to come: anatomy and movement, which would eventually culminate in his great *anatomic animata.* Thereafter he would be completely absorbed by a third idea: the application of his concepts on movement to the blood. Harvey's one goal, then, was to develop an animate anatomy of the blood, an anatomico-physiologic theory on the movement of the blood.

—*Marti-Ibañez*

A New Study of Intestinal Obstruction

With Special Reference to Cases Involving Delayed Treatment

M. S. EMINE, M.D., F.I.C.S.*

TABRIZ, IRAN

The principles of treatment for intestinal obstruction are outlined, with emphasis on the urgent need of good preoperative care, particularly when treatment has been delayed for several days since the onset of symptoms. This care must include all routine precautions, plus any special procedures required in the individual case, since the patient who has delayed treatment is usually in poor condition. Management prior to surgical intervention, therefore, should be governed by the adage "Make haste slowly." Although the operation must be considered an emergency procedure, especially if strangulation is present, adequate preparation by effective modern means remains vitally important.

THE following study is an outgrowth of my work and observations over a considerable period and with hundreds of patients, chiefly in the Bualy Hospital of Tarbiz University, in my native country of Iran. This summary in English of a paper originally written in Persian is offered for the convenience of any who do not know our language and who may be interested in the subject. I have tried to avoid the use of technical terms and have sought to explain the essential steps in diagnosis and treatment that will best serve the needs of the patient.

My surgical experience in various hospitals in Tabriz and elsewhere indicates that acute intestinal obstruction occurs most often among the peasant classes, most of whom usually do not consult a doctor until after the lapse of four or five days from the onset of symptoms, by which time they are in a dehydrated and toxic condition and nearly, if not quite, beyond the power of medical and surgical skill to save their lives. To complicate matters further, sometimes—though they have seen a doctor—the diagnosis has been wrong and a purgative has been prescribed, or the patient has taken a laxative on his own initiative.

The predisposing cause of the condition appears to be a diet consisting of too much bread of a heavy quality, together with excessive use of such liquids as the so-called "dough" (a mixture of yoghurt and water). Other dietary errors also contribute.

Before beginning any treatment, one must first know thoroughly the physiopathologic nature of the condition and the complications that may be encountered. Full advantage should be taken of chemical and biochemical laboratory facilities.

Experience has shown that the mechanical condition of the intestines themselves

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*Professor of Surgery and Dean of the Medical Faculty, Tabriz.

From the University of Tabriz, Bualy Hospital. An English summary of the original study in Persian.

Submitted for publication June 19, 1957.

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ZUSAMMENFAS

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as determined by the history, the symptoms, roentgen study and other examinations, have a direct bearing on arrival at a correct diagnosis. Extraordinary care must be taken to assure complete and meticulous evaluation of every obtainable particle of information, from whatever source, before a decision is made as to operative and other treatment.

Preoperative Care.—Formerly it was my practice, in the type of case aforementioned, (i. e., the case primarily complicated by neglect or mistreatment) to operate immediately, but further experience has shown that better end results can be obtained when all the indicated laboratory, roentgenographic, fluoroscopic and other studies are done first. In any event, the basic items already cited—evacuation of the stomach and duodenum, correction of water balance and treatment of azotemia—must be kept clearly in mind throughout all stages of treatment. Specifically, these may be handled by the use of (a) Wangensteen suction, with either water bottle and siphon or a light pump; (b) parenteral fluids to supply water, dextrose, glucose, sodium chloride and potassium, and (c) parenteral solutions with dextrose to correct azotemia.

Shock is an almost invariable complication in these delayed cases. When this develops before operation can be undertaken, it must be treated separately by the routine method of administration of parenteral fluids, transfused blood and plasma or plasma substitutes, together with inhalation of oxygen and injections of adrenal gland extract or hypertensive drugs.

Peristalsis. Nothing should be given preoperatively to increase peristalsis unless there is a definite diagnosis of paralytic ileus.

Anesthesia. A general anesthesia should be used, special attention being paid to the patient's circulatory status. Preliminary injections of morphine with atropine or scopolamine will facilitate induction. Because of the emergency nature of these cases, all decisions regarding both the anesthetic and the surgical procedure, must be made with the utmost possible speed—*delay may be fatal!*

In my service in the Bualy Hospital during the period from 1948 to 1955, operations were performed on 255 such patients, and the aforementioned principles gave good results. It should be pointed out again, however, that delay was a governing factor in the proportion of deaths, which ranged from 18 to 50 per cent, depending directly upon the interval between the onset of symptoms and admission to the hospital. Among patients who had waited three days or more after the onset, a full 50 per cent died, owing to dehydration and general debility, while of those who sought help within forty-eight to seventy-two hours only 30 per cent failed to survive. Those seen and operated upon within the first twenty-four hours showed a mortality rate of only 7 per cent. The moral is obvious: people must be taught to consult a doctor immediately, if proper treatment is to be instituted and the tragic mortality and morbidity rates associated with this condition are to be reduced.

Postoperative Care.—Suction: Gastrointestinal aspiration prevents accumulation of secretions in the intestines, which, in turn, will cause nausea, vomiting and distention. It must be remembered, however, that its use tends to aggravate the water and electrolyte imbalance. Therefore, the amount of aspirated fluid must be measured and equivalent amounts of parenteral fluids administered intravenously to restore this balance. If this is done, suction may safely be maintained for up to five days after the operation.

Fluids and Nutrition: Blood concentration of electrolytes must be kept up to normal by supplying adequate amounts of does not always explain the abnormal systemic state. The bowel may be in relatively good condition; i.e., there may be no gangrene, yet the patient may be moribund or nearly so, or vice versa. According to some observers, the condition may result from any one of four causes:

1. *Infection.* In some quarters it has been theorized that a local infection can result in a septic condition, yet produce no indications of septicemia upon blood culture. Examination of the peritoneal fluid will show no abnormal micro-organisms except in the later stages.

2. *Toxemia.* It has also been held that intestinal toxins enter the blood stream, but my own examination of such bowel secretions shows these to differ but little from normal intestinal secretions.

3. *Shock.* The upper part of the obstructed section of intestine will show a decrease in absorption, while in the lower part absorption is increased. According to this theory, after the obstruction is relieved the liquid flows to the lower part to be absorbed; tests on animals, however, show that such absorption is insufficient to produce a toxic condition. There is also an idea that removal of the obstruction results in a drop in blood pressure.

Anerobic Bacteria. Some are convinced that these also contribute to toxicity.

My own observations, through blood and biochemical studies, tend to indicate that, in general, a change in the amounts of potassium and sodium in the blood and other body fluids disturbs the electrolytic balance, thus causing toxemia and death. In addition, mechanical pressure by the distended intestines upon the neighboring organs upsets the entire physiologic scheme, as indicated by the measure of relief afforded the patient by the mere aspiration of the distending liquids and gas. These two factors together appear to be responsible for the passage of plasma and serum from the blood into the intestines, resulting in changes in the bowel wall and in peristalsis, throwing both absorption and fluid-electrolyte equilibrium out of balance. These changes may be summarized as follows: (a) the internal intestinal pressure is increased; (b) peristalsis first *increases,* in an attempt to overcome the obstruction, then *decreases* and *finally stops entirely;* (c) the intestinal blood vessels first become congested but, later, circulation slows down or stops altogether, apparently owing to a kink in the mesenteric vessels or to pressure from some twist in the mesentery itself; (d) absorption from the intestines becomes variable and usually decreased, and (e) general changes take place in the lungs, liver, heart and kidneys.

This complex of organic and functional deterioration appears to me, after years of observation, to be due to three things:

1. Loss of fluids, causing hemoconcentration.

2. Disturbance of the electrolyte balance (hypercholemia or hypochloremia);

3. Hyperglycemia, azotemia, alkalosis and hyperkalemia.

Treatment, then, should be directed toward removing this aggregation of abnormalities by the following means: (a) correct fluid and electrolyte imbalance by administration of parenteral fluids; (b) administer oxygen to correct anoxemia; (c) combat infection with antibiotics; (d) aspirate the bowel contents to relieve distention, and (e) then — and only then — proceed with the essential operation.

Diagnosis.—As the actual physical elements of intestinal obstruction are familiar to all surgeons, it seems necessary only to point out that, in such delayed cases—and I am convinced that delays resulting from ignorance and superstition are not peculiar to any one race or nation—the time of onset and the point of obstruction,

distention and bradycardia (clearly demonstrable by photometric means). These complications may be averted by the oral or intravenous administration of preparations of potassium, 2 to 6 Gm. of potassium chloride or 4 to 8 Gm. of potassium nitrate usually giving good results.

Other points in postoperative care that must be carefully observed include the methodical administration of antibiotics and the employment of antispasmotic drugs, such as atropine (which also decreases gastric secretion), to counteract intestinal spasm. Sometimes, solution of procainehydrochloride (5 to 10 cc. 0.5 or 1 per cent) may be used to increase the blood pressure. ACTH or adrenal gland extract in small doses, will help to reduce distention. The use of cortisone also gives good results at times; ACTH with cortisone (100 mg. of each), when used with discretion, may be effective. The administration of oxygen helps absorption of nitrogen in the lungs and intestines. Only in cases of extreme need should any drug be given to increase peristalsis; purgatives or enemas are not advisable for two or three days after the operation, and even thereafter an enema is preferable if an aid to evacuation is required. If convalescence is progressing favorably, the patient may be moved with care after the third postoperative day.

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1. A correct diagnosis may be arrived at by making full use of history, physical examination and laboratory and roentgen studies.

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3. Preoperative care must include all routine precautions plus those special procedures required by the fact that the victim of delay is usually in extremely poor condition when first seen; in other words, one should "make haste slowly."

4. Full use should be made of gastrointestinal suction throughout the patient's stay in the hospital.

5. All available measures should be used to restore fluid and electrolyte balance.

6. General anesthesia should be employed.

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Liquids *per se* may be administered either rectally or by means of a jejunal catheter. Nutrient solutions I administer by inserting a blunt needle into a vein, either in the arm or on the medias aspect of the ankle, and letting the liquid flow by intravenous drip.

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Also, intravenous injections can cause shock-jaundice, oliguria, anuria and air embolism. Every precaution, therefore, must be taken to see that flawless technic is employed in giving intravenous injections.

To sum up briefly, my observations have shown that, in general, it is more difficult to maintain the equilibrium of body fluids than that of body salts.

Normally, during the first two days after an operation, the patient needs about 2,500 cc. of liquids. As for salts, whereas it was once my opinion that hypertonic solutions should be given intravenously, I soon learned that this could result in plasmatic hypertony—it became evident that the patient really needs little salt during this period, about 3 Gm. daily during the first two days, and 4 Gm. on the third day. After this, the amount of salts lost in aspirated fluids must be estimated and an equivalent amount added to the basic amount of 4 Gm.

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Adrenal cortex hormone has a strong influence on the metabolism of body potassium—an increase of this hormone increases excretion of this element. And it may be noted in passing that changes in body potassium show up, among other places, on the electrocardiogram.

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3. Además de las normas generales para el preoperatorio, debe tenerse en cuenta:

que estos enfermos vistos con retraso generalmente están en un estado muy deficiente; en otras palabras, hay que "darse prisa despacio."

4. Debe colocarse una sonda de estracción continua durante todo el tiempo que esté el enfermo en el hospital.

5. También deben ponerse en práctica todas las medidas para nivelar el balance acuoso y le electrolitos.

6. Usese anestesia general.

7. Aunque la operación debe considerarse como una urgencia, sobre todo cuando hay extrangulación, antes hay que preparar adecuadamente al enfermo en la forma antes señalada.

8. Es de esperar que se encontrarán métodos cada vez mejores para ayudar al paciente a una rápida y más segura convalecencia.

RIASSUNTO E CONCLUSIONI

Nell'accingersi a curare un'occlusione intestinale, specialmente quando siano trascorsi molti giorni dall'inizio dei sintomi, il chirurgo deve tener presenti i seguenti punti:

1. Una diagnosi corretta è possibile con una anamnesi accurata, con un esame clinico completo e con l'aiuto delle ricerche di laboratorio e radiologiche.

2. Bisogna dare molta importanza allo studio del bilancio idrosalino, che si compie con le note metodiche.

3. La cura preoperatoria comprende tutti i provvedimenti comuni oltre ad alcune cure particolari in conseguenza del fatto che questi malati si trovano abitualmente in pessime condizioni.

4. L'aspirazione intestinale deve essere continuata per tutta la durata delle degenza.

5. Il bilancio idrico ed elettrolitico deve essere ricondotto alla norma con ogni mezzo.

6. Si deve usare l'anestesia generale.

7. L'intervento, in ogni caso, deve essere considerato sotto il profilo dell'urgenza, ma deve essere iniziato solo dopo che il paziente abbia ricevuto l'opportuna preparazione.

8. E' sperabile che i progressi della terapia possano migliorare la prognosi di questi malati.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Bei der Behandlung von Darmverschlüssen muss der Chirurg, besonders wenn seit Einsetzen der Krankheitserscheinungen mehrere Tage verstrichen sind, folgende Punkte im Auge behalten:

1. Zur richtigen Diagnose verhelfen eine sorgfältige Krankheitsgeschichte, körperliche Untersuchung, Laboratoriumsteste und röntgenographische Befunde.

2. Besonderer Wert ist auf eine sorgfältige Abschätzung der Flüssigkeits- und Elektrolytenbilanz auf Grund der Entwicklung der Ergebnisse der Blutzentrifugierung, der Bestimmung der Plasamkonzentration und anderer chemischer Blutuntersuchungen zu legen.

3. Bei der präoperativen Behandlung muss neben allen üblichen Vorsichtsmassnahmen berücksichtigt werden, dass die Opfer eines Aufschubs der Behandlung gewöhnlich in äusserst schlechtem Zustand sind, wenn sie zum ersten Mal untersucht werden, und infolgedessen besondere Massnahmen erfordern; mit anderen Worten, es empfiehlt sich nach dem Motto "Eile mit Weile" vorzugehen.

4. Während der gesamten Dauer des Krankenhausaufenthaltes sollten Absaugeverfahren am Magendarmkanal des Kranken umfangreiche Anwendung finden.

5. Alle verfügbaren Mittel zur Herstellung der Flüssigkeits- und Elektrolytenbilanz sollen benützt werden.

6. Zur Anästhesie soll allgemeine Narkose angewandt werden.

7. Der eigentliche operative Eingriff soll

besonders in Fällen von Darmeinklemmung als eine Notmassnahme angesehen werden, die jedoch nur *nach* zweckmässiger Vorbereitung des Kranken, wie sie oben dargestellt ist, ausgeführt werden soll.

8. Es ist zu hoffen, dass weitere Verbesserungen der Behandlungsmethoden diesen Kranken zu einer sichereren, besseren und schnelleren Wiederherstellung verhelfen werden.

RÉSUMÉ ET CONCLUSIONS

Les points suivants sont à relever dans le traitement de l'obstruction intestinale, surtout lorsque le début des symptômes date de plusieurs jours:

1. Le diagnostic exact peut être posé au moyen d'une anamnèse, précise, de l'examen clinique et radiologique, et de tests de laboratoire.

2. L'équilibre des liquides et des électrolytes doit être étudié attentivement selon l'anamnèse des symptômes, la concentration du plasma ainsi que d'autres études chimiques du sang.

3. Les soins post-opératoires doivent comporter toutes les précautions d'usage, ajoutées à celles nécessitées par le mauvais état général de ces cas traités avec retard, et le précepte "hâte-toi lentement" est ici de mise.

4. Pratiquer des aspirations gastro-intestinales durant tout le séjour du malade en clinique.

5. Prendre toutes les mesures tendant à restaurer l'équilibre des liquides et des électrolytes.

6. Anesthésie générale.

7. L'opération doit être considérée comme urgente, surtout en cas d'étranglement, mais seulement *après* une bonne préparation du malade.

8. Il s'agit de rechercher de meilleures méthodes assurant une guérison plus sûre, plus complète et plus rapide de ces cas.

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Fatal Hemorrhage from Duodenal Varix

PAUL HWANG, M.D.,* EUGENE J. JOERGENSON, M.D.,
PAUL ANSPACH, M.D., AND ALBERT F. BROWN, M.D.**

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INTESTINAL varix as a cause of massive hemorrhage is a condition seldom observed or reported, if the term "varix" is restricted to the usual concept of a chronically distended nonangiomatous vein of macroscopic caliber.

The hemangiomatous and telangiectatic lesions of the gastrointestinal tract, as so clearly delineated in the exhaustive review by Gentry and his collaborators[1] do not include "chronic varicosities." If this logical separation is respected, the reported instances of intestinal bleeding varix seem uniformly and truly to represent some other entity, particularly the cavernous hemangioma.

In the case to be described, a lesion was present which appears to correspond both morphologically and in pathogenetic implications to the concept of venous varicosity.

REPORT OF CASE†

The patient, a Caucasian housewife aged 50, 5 feet 6 inches (168 cm.) in height and of medium weight, was working and well until the night of March 8, 1952, when she noted a black stool and red staining of the water in the toilet after a bowel movement. This was followed by several similar movements the same night, until she nearly fainted. The next morning she vomited bright red blood several times. There was no abdominal pain except for a slight cramping with the first black bowel movement.

The patient was born in Michigan, married in 1923, and had lived in California since 1930. The past history showed no pregnancies, no gastrointestinal disturbances and no hypertension. The patient used no liquor or tobacco.

About seven years earlier she had had a fall from horseback and was in bed for six months for a broken wrist and deep trauma to the abdomen and thighs, incident to the fall. Prominent veins over the chest, abdomen and thighs were noted after this accident. Further information from the patient's sister indicated that the patient had severe phlebitis of both legs in 1924, following an attack of "pneumonia" from which she nearly died. After this her legs always swelled when she was up and about. She also had repeated attacks of "pneumonia" from 1934 to 1943.

In November 1943, after the horseback accident, phlebitis was said to have developed in the right leg and large, prominent and apparently thrombosed vessels became noticeable over the abdomen. Later, the "thrombi cleared," and the large, tortuous, dilated vessels remained. In 1947 the patient underwent bilateral saphenous ligation.

Appendectomy was performed in 1932. In 1943 there was mild hyperthyroidism, which subsided under medical treatment. The family history was noncontributory.

On admission to the hospital (1:30 p.m., March 9, 1952), the patient appeared pale. The blood pressure in millimeters of mercury was 125 systolic and 50 diastolic; the pulse rate, 24. The heart showed an occasional premature systole and a Grade II apical systolic murmur. The liver was not palpable. There was slight midepigastric tenderness. The abdomen was soft. There was bilateral 2 plus pitting edema of the ankles. The dorsalis pedis pulses were palpable. The thyroid was enlarged and apparently nontoxic. The patient was mentally alert. Roentgen examination of the upper part of the gastrointestinal tract showed irritability of the lower portion of the esophagus, the presence of a small hiatus hernia and spasm of the prepyloric end of the stomach. The red blood cell count was 2,760,000 per cubic milli-

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†C. H. Talmage, M.D., kindly supplied portions of this patient's clinical record.

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meter, with 8.5 Gm. of hemoglobin; the white blood cell count, 5,800, with 88 per cent neutrophils. The diagnosis was massive gastrointestinal hemorrhage of undetermined origin.

The patient was treated conservatively, as in hemorrhagic ulcer management. During the night she had several more loose dark stools. On March 10 the blood pressure was 95 systolic and 60 diastolic and the pulse rate 108. The hemoglobin dropped to 7.3 Gm. per hundred cubic centimeters despite transfusion of 4 pints of blood.

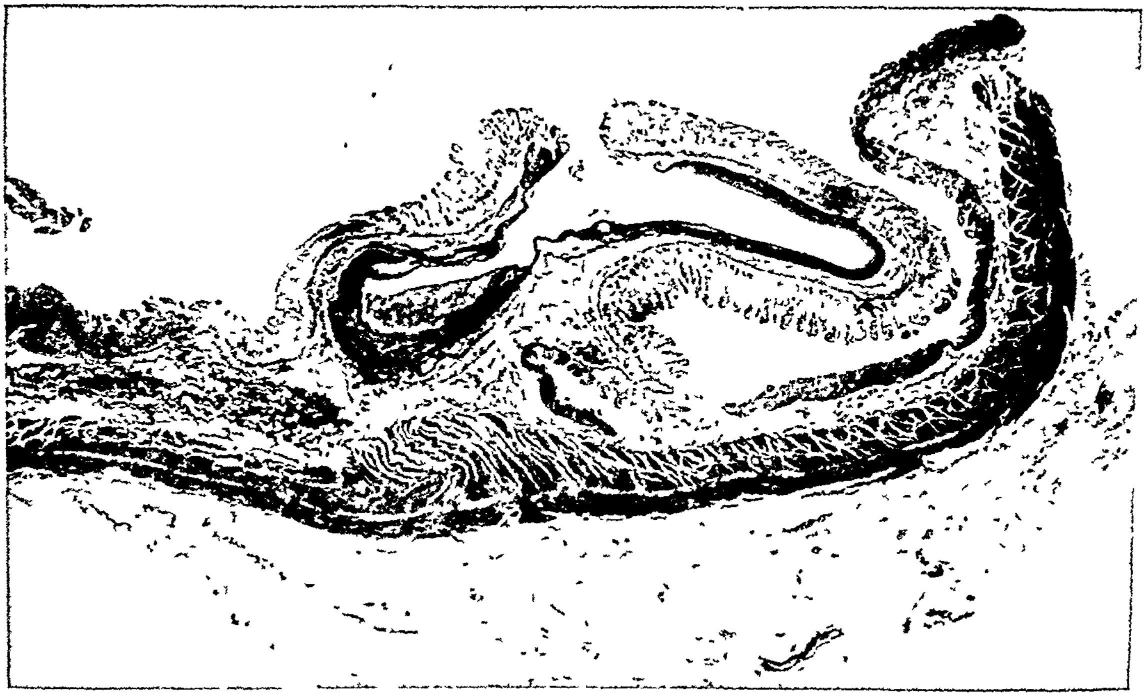
Surgical exploration was done at 10 p.m. on March 10. As the peritoneum was entered, about 4 liters of clear ascitic fluid was obtained. The bowel was not particularly dilated at any portion, but both the large and the small intestine appeared dark bluish, owing to their bloody contents. The stomach was opened through a transverse incision on its anterior surface and the inside thoroughly examined. The cardia was examined for esophageal varices, but none was detectable. The pyloric region was palpated internally as far as the second portion of the duodenum, and no ulcer, induration or fresh blood was found. The small bowel was than palpated beginning at the ligament of Treitz and examined minutely to the cecal junction. No masses, indurations, diverticula or clues of any kind to a possible source of bleeding was noted, except for the presence of a Meckel diverticulum, which was then resected in its entirety and the bowel closed with sutures. The diverticulum appeared normal, with intact mucosa. The colon was then palpated from the cecum to the lower part of the sigmoid. No diverticula, masses or sources of bleeding were identified in this area. The spleen was slightly enlarged. No evidence of portal hypertension was discovered. The abdomen was closed, with the patient in fairly good condition.

Whole blood was given through cannulas at a speed to maintain the blood pressure at the admission level, to a total of 30 pints during the fifty-hour hospitalization. The patient showed no improvement; the diarrhea with bloody stools went on continuously. She died in shock seventy-two hours after the onset of symptoms.

At autopsy, the subcutaneous veins over the chest, the abdomen and both thighs and hips remained prominent. The thyroid showed benign nodular goiter. The pericardial sac contained 80 cc. of clear fluid; each pleural sac, [illegible]00 cc. The peritoneal sac contained 3,000 cc. of slightly red, clear fluid. The lungs showed some hypostatic congestion and edema, more pronounced on the left. The heart had a 1.5 mm. fenestration near the free border of the right cusp of the aortic valve, which may have had no functional significance. The coronary arteries showed no atherosclerotic change and the aorta only a slight amount. The right common iliac vein was narrowed and sclerosed, containing a stone-hard core around which there was some canalization. Microscopically it showed a calcified fibrous core consistent with old thrombosis. The right retroperitoneal veins showed extensive varicosity and engorgement, less pronounced on the left. The same was true of the azygos veins and the diaphragmatic tributaries. The veins of the lower portion of the esophagus were [illegible] tortuous and congested.

Examination of the digestive system [illegible]

> *Internal varices, which may occur in any one of many sites, wherever there is a sustained increase in venous pressure from any of several causes, may represent a grave hazard to the surgical patient if not detected. The compression and constriction of anastomotic veins caused by trauma or thrombosis, when associated with familial inherent weakness, for example, leads to varicosity. The development of internal varices is rather difficult to establish. The authors suggest, however, when massive intestinal hemorrhage is associated with probable portal hypertension, external varicose veins, or history of other venous anomaly, the rupture of an intestinal varix should be included in the differential diagnosis. Particularly, when abdominal visceral or parietal varices are encountered during exploration in such a case, the intestine should be carefully searched for a site of possible varicose rupture.*



Duodenum showing ruptured submucosal varix. × 10.

showed no ulceration. There was no evidence of incarceration at the potential hiatus hernia. The stomach contained partially digested blood and some food material. The mucosa was intact except for a 1 cm. ecchymotic crevice in a slightly dark red, discolored area in the posterior wall near the middle of the lesser curvature. Microsection of this crevice showed a defect of the mucosa, slight local submucosal hemorrhage and an adjacent, but unruptured, moderately enlarged vein. The small bowel contained dark blood throughout its length. The mucosa appeared normal, had no diverticula and showed no ulceration or staining. Repeated inspection of the duodenum finally brought under attention a 1 mm. aperture in the center of a 6 mm. mucosal elevation at the juncture of the second and third portions. A few tortuous submucosal veins, apparently thrombotic, were observed in the vicinity of this aperture. The colon appeared essentially normal, containing a large quantity of dark, clotted and free blood, moderately staining the colonic mucosa. No diverticula were observed. The operative wound closures of the stomach and the Meckel diverticulum appeared normal for the procedures and showed no evidence of hemorrhage. The liver was not enlarged. Microscopically, it showed moderate loss of lobular markings but no cirrhotic changes. The portal system showed no significant dilation. The pancreatic and bile ducts contained no blood. The spleen, weighing 430 Gm., was slightly pultaceous. The kidneys showed slight congestion The genital organs appeared essentially normal except for a 1 cm. benign endometrial polyp.

Longitudinal microscopic sections through the vascular area noted in the duodenum showed large submucosal saccular thin-walled varicosities. The section through the mucosal elevation and "hole" showed thinning and rupture of the underlying varicosity, perforating the mucosa into the duodenal lumen (see illustration). The edges of the defect showed stretching and thinning of the wall at the vein and small thrombotic deposits. The endothelium extended beyond the frayed edge of the vein wall and was applied to the deep aspect of the mucosa in a manner suggestive of a preliminary state of false "aneurysm" formation preceding the free rupture. An adjacent varicosity contained a small red clot, but for the most part these dilated channels were empty.

COMMENT

Venous varicosities may occur anywhere in the body. Most familiar are those of the legs. Other common sites are the rectum, the spermatic cord and the esophagus. Less common are the broad ligament, the stomach, the urinary bladder, the upper extremity, the veins of the central nervous system and the veins of the intestinal tract. Varices in the last two sites last mentioned are often obscure.

Varicosities may develop in any part where there is a sustained increase in venous pressure due to postural strain or to compression or constriction of anastomotic veins resulting from trauma or thrombosis. Any of these, associated with familial inherent weakness and progressive degeneration of the valves and wall (most internal veins have no valves), through impaired nutrition or inadequacy of supporting tissues, leads to varicosity.

The presence of portal hypertension or anastotomic effects following thrombophlebitis may help in diagnosing the presence of internal varices, but the evidence is by no means certain; establishing the sequence of development of varicosities in these conditions is rather difficult. We may suggest, however, that when massive intestinal hemorrhage is associated with probable portal hypertension, external varicose veins or history of some other venous anomaly, the rupture of an intestinal varix should be included in the differential diagnosis. Particularly when abdominal visceral or parietal varices are encountered during the exploration in such a case, the intestine should be carefully searched for a site of possible varicose rupture. That this is a difficult assignment is illustrated in the case here reported, in which, under direct inspection at autopsy, the vascular defect at first eluded observation. Even in life, the oozing of blood from such a tiny point might escape attention.

SUMARIO

As varicosidades venosas podem surgir em qualquer parte do corpo. As mais comuns são nas pernas, seguindo-se reto, cordão e esofago. São sitios menos comuns ligamento redondo, estomago, bexiga, membro superior, sistema nervoso central e aparelho intestinal. Podem se desenvolver onde existe aumento de pressão venosa por esforço, compressão ou constricção das anastomoses devidos a traumas ou tromboses. Debilidade familiar, degenação progressiva das valvas parietais com desnutrição ou sustentação inadequada dos tecidos moles são fatores que levam ás varicosidades. A presença de hipertensão porta ou efeitos anastomoticos devidos a tromboflebite podem auxiliar o diagnostico de varisesinternas mas sem certesa. Hemorragias intestinais massiças associadas com provavel ripertensão arterial, varises externas ou historia de outras anomalias venosas podem ser incluidas no diagnostico diferencial. Quando as varises abdominais, vicerais ou parietais são encontradas durante o exame o intestino deve ser cuidadosamente pesqui sado como sitio provavel de rutura varicosa. O casa do A. demonstra como é deficil essa precisão porque, nesse caso, pela necropsia a inspecção de transtorno vascular elucidou a observação.

RIASSUNTO

In qualunque parte del corpo possono manifestarsi delle varicosità delle vene; le più comuni sono quelle degli arti inferiori. Altre sedi sono reappresentate dal retto, dal funicolo spermatico e dall'esofago; meno di frequente dal legamento largo, dallo stomaco, dalla vescica urinaria, dall'arto superiore, dal sistema nervoso centrale e dal tubo digerente. Le varici di questi ultimi due distretti *sono* le più difficili da interpretare.

Le varici si manifestano dovunque esista un aumento della pressione venosa per ragioni posturali, compressione *o* costrizione delle vene anastomotiche per trauma o trombosi. Ognuna di queste ragioni,

Routine Use of Peri-Colace in Major Surgical Cases

TIMOTHY A. LAMPHIER, M.D., F.A.C.S., F.I.C.S.
AND
FRANK L. LYMAN, M.D.
BOSTON, MASSACHUSETTS

In the authors' experience and that of a number of others, the drug Peri-Colace is an effective agent in restoring the mobility of the intestine and keeping the intestinal contents soft after an operation. A study of its results was made in 50 operative cases, in 90 per cent of which the usual postoperative enemas, which the authors consider not only unnecessary but undesirable, were eliminated. None of the patients complained of griping, cramps, or any other untoward side effect.

WITH the introduction of new drugs, surgical technics and anesthetics, the problem of postoperative intestinal physiology has often been disregarded. The infallible routine in most institutions has been to give an enema on the third postoperative day. For too many patients, the pain and discomfort of an enema remains in their minds long after other unpleasant symptoms connected with the operation have been forgotten. In addition, the administration of an enema is a time-consuming and disagreeable task for nurses and their aides.

The postoperative enema is neither physiologic nor rational. The stomach and intestines are empty of food residue, since the patient's entire gastrointestinal tract was cleaned out prior to the operation. Furthermore, the liquid diet fed postoperatively contains very little residue.

Although it may provoke a defecation, the postoperative enema does little to reestablish normal intestinal motility. Nor does it prevent the formation of fecal impactions, an ever present postoperative hazard that is especially characteristic of the aged. Likewise, an enema, especially if
it contains soapsuds cause irr
of the bowel. U iologic
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The aims
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1. To overcome intestinal paralysis by reestablishing normal peristalsis.
2. To keep the intestinal contents soft and easily passed, so that straining is minimized.
3. To prevent fecal impaction.
4. To eliminate the use of intestinal irritants that may cause griping and inflammation of the intestinal tract.
5. To make the patient as comfortable as possible after the operation.

Certain etiologic factors in poor postoperative intestinal function are outstand-
g:

Interrupted logic processes
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Submitted for pub

the effect of anesthesia (especially spinal) in producing an atonic colon; (c) the use of morphine and similar drugs, especially the ganglionic blocking agents, and (d) pneumoperitoneum.

2. Change of diet.
3. Restricted fluid intake.
4. Restricted ambulation.
5. Anxiety in the patient, based on (a) fear of rupturing the incision; (b) fear of defecation; (c) fear of enemas, and (d) fear of straining.

Two factors in the reestablishment of normal physiologic function seem important:

(1) The reestablishment of normal motility to the intestine, and (2) maintenance of the softness of the intestinal contents.

A new *"laxating"* agent, Peri-Colace,* was studied to learn whether it would meet the aforementioned criteria and thus eliminate the necessity for the postoperative enema.

Peri-Colace is composed of two active ingredients:

1. Dioctyl sodium sulfosuccinate (Colace).
2. Methanol extracted, purified and standardized glycosides of cascara (Peristim).

The fact that dioctyl sodium sulfosuccinate does prevent the formation of hard, dry stools was first reported by Wilson and Dickinson[1] and later verified by Antos,[2] Turell,[3] Lamphier[4] and others. Dioctyl sodium sulfosuccinate works in two ways: (1) it produces an emulsion between the water and oils present in the fecal stream, and (2) it lowers the surface tension of water in the fecal stream.

Clinically, Rosenfeld and his associates[5] have reported that dioctyl sodium sulfosuccinate is effective in preventing fecal impactions as well as in keeping the stools soft.

The Peristim portion of Peri-Colace is absorbed from the small intestine and exerts its peristaltic stimulating action directly on the large intestine, via the blood stream. Lamphier[4] has previously reported on the efficacy of Peri-Colace as a "laxating" agent.

Lish and Dungan,[6] in animal studies, have reported that Peristim is able to overcome postoperative intestinal stasis and antagonize the propulsion-inhibiting effects of ganglionic blocking agents. In their summary, these authors reported: "The results suggest that, in the human, Peristim would be a reliable peristaltic-stimulant even in cases of hypomotility induced by operative procedures, anticholinergic, antispasmodic, or hypotensive therapy."

On the basis of these animal studies, it seemed reasonable to assume that Peri-Colace would be an excellent agent to reestablish the physiologic intestinal processes after the operation.

Method of Study.—One to 2 capsules of Peri-Colace were administered, on admis-

TABLE 1.—*Postoperative Day of First Bowel Movement*

2d		14
3d		19
4th	No enema	12
4th	After enema	5

TABLE 2.—*Type of Operation Performed*

Appendectomy	15
Hysterectomy	11
Pelvic laparotomy	7
Cholecystectomy	3
Abdominal hernia repair	[illegible]
Inguinal hernia repair	3
Cesarean section	2
Miscellaneous	[illegible]
Total	[illegible]

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*[illegible]

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Although it may provoke a defecation, the postoperative enema does little to reestablish normal intestinal motility. Nor does it prevent the formation of fecal impactions, an ever present postoperative hazard that is especially characteristic of the aged. Likewise, an enema, especially if it contains soapsuds, may cause irritation of the bowel. Unless physiologic solution of sodium chloride is used, there is always a possibility of water intoxication.

The aims of reestablishing function of the bowel should be:

1. To overcome intestinal paralysis by reestablishing normal peristalsis.
2. To keep the intestinal contents soft and easily passed, so that straining is minimized.
3. To prevent fecal impaction.
4. To eliminate the use of intestinal irritants that may cause griping and inflammation of the intestinal tract.
5. To make the patient as comfortable as possible after the operation.

Certain etiologic factors in poor postoperative intestinal function are outstanding:

1. Interrupted physiologic processes due to:

   (a) handling and manipulation of the bowel during the operation; (b)

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the effect of anesthesia (especially spinal) in producing an atonic colon; (c) the use of morphine and similar drugs, especially the ganglionic blocking agents, and (d) pneumoperitoneum.

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*[illegible]

sion to the hospital, to each of 50 general surgical patients selected at random. Since Peri-Colace has proved itself gentle and without side effects in the hands of the investigators, the medication was started on the night of admission (elective surgical procedures). In cases of emergency surgical intervention the medication was instituted on the first postoperative day. It was continued until the initial postoperative bowel movement was passed.

Results.—Forty-five patients, or 90 per cent of those studied, had a satisfactory bowel movement on or before the fourth postoperative day, thus eliminating the *necessity of an enema. These results are* presented in Table 1. To 5 patients, or 10 per cent, an enema was given on the fourth postoperative day in order to produce an evacuation. It is worthy of note that all of these patients (50) reported that the first bowel movement was soft and easily passed. No side effects, such as griping and cramps, were mentioned. The types of operation performed on these patients are listed in Table 2.

COMMENT

It seems reasonable to assume that the work of Lish and Dungan[6] on animals, showing that Peristim overcomes postoperative intestinal stasis, may be transferred to man. One of the problems encountered in conducting this study was the difficulty of convincing nurses that enemas were not necessary when the patient had a normal bowel movement. A number of the patients were given enemas in spite of the fact that they had already had a satisfactory bowel movement. Although Peri-Colace is apparently effective in eliminating the need for the postoperative enema, some reeducation may be necessary among the nurses to establish the postoperative use of this drug.

In 5 cases in which the treatment failed, the patients were women. Three of these patients (oophorectomy and abdominal hernia, cystocele and rectocele, and bilateral sympathectomy) stated that they had a great fear of straining and thus avoided spontaneous defecation.

ZUSAMMENFASSUNG

Peri-Colace ist ein wirksames Mittel, eine normale postoperative motorische Funktion des Darmes wiederherzustellen und den Darminhalt weich zu halten. Bei 50 Fällen, an denen das Mittel angewandt wurde, liessen sich 90 Prozent der postoperativen Einläufe vermeiden.

RESUMEN

El Peri-Colace es un agente efectivo para restablecer la movilidad intestinal normal y la consistencia blanda de las heces en el postoperatorio. Con el uso de este medicamento en cincuanta casos fuê posible prescindir del enema en el 90% de las veces.

SUMARIO

O Peri-Colace e um agente efetivo de restauração da motricidade intestinal posoperatoria com manutenção do amolecimento do conteudo intestinal. O uso desse medicamento em 50 casos permitiu a eliminação de 90% dos enemas pos-operatorios.

RIASSUNTO

Viene presentata una serie di 84 casi di Malattia di De Quervain. Il 99% di questi malati fu curato chirurgicamente con successo. I metodi conservativi debbono essere proscritti perchè prolungano l'invalidità e la perdita di giornate lavorative. Anche l'iniezione locale di cortisone non ha alcuna efficacia.

La causa della malattia è sconosciuta; certamente è in rapporto con il lavoro manuale.

Viene descitta la tecnica dell'intervento usato nella cura di questa malattia.

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John Wesley's *Primitive Physick, or an Easy and Natural Method of Curing Most Diseases*, provides some entertaining reading. The father of Methodism accuses the doctors of keeping the bulk of mankind at a distance. so that they could not pry into the mysteries of the profession. by filling "their writings with abundance of technical terms. utterly unintelligible to plain men." He thought this was done for the sake of gain and. to remedy the situation. set down a long list of "cheap. safe and easy medicines: easy to be known. easy to be procured and easy to be applied by plain unlettered men." We read that "fasting spittle outwardly applied every Morning. has sometimes relieved. and sometimes cured Blindness. Corns. Deafness and Warts." and that the best treatment for a cancer in the breast is to take a cold bath. "This has cured many," he writes. "This cured Mrs. Bates of Leicestershire. of a Cancer in her Breast. a Consumption. a Sciatica. and Rheumatism. which she had near twenty Years.—She bathed daily for a month. and drank only water."

[Stephen] Hales's excursions into the realms of medicine. while less entertaining and diverting. had more solid and enduring worth. The critical physician. after he has been entertained by the books of Berkeley and Wesley. quite naturally wonders whether their philosophy and theology is as absurd as their science. On the other hand. when he reads Hales's scientific papers. he is charmed by the author's logical mind and his innate modesty and is filled with curisity to know whether the same clarity of vision permeates his theology.

—*Major*

Renal Colic Secondary to Traumatic Avulsion of the Psoas Muscle

Report of a Case

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A report is presented of a patient with renal colic and intractable pain in the lower part of the back, the pelvis and the thigh, due to avulsion of the psoas muscle. The fibrosis in and around the avulsed psoas muscle (which occurred after injury three years earlier) displaced and compressed the ureter, causing attacks of renal colic. It also involved the genitocrural nerve, resulting in intractable pain in the area supplied by this nerve. Precise information obtained by complete urologic examination—cystoscopic, retrograde pyelographic and excretory urographic studies and perirenal air insufflation—led to the diagnosis. Relief was obtained by ureterolysis and freeing of the genitocrural and femoral nerves.

THE case to be reported is a rare instance of avulsion of the psoas muscle without fracture of the transverse processes of the lumbar vertebrae.

Because of intractable disabling pain in the left kidney, inguinal region, testicle and thigh, Mr. J. H., aged 45, was referred by Dr. Russell D. Jaekle for urologic examination. The precise information obtained from retrograde pyelographic and excretory urographic studies and from retroperitoneal air insufflation led to the diagnosis of a sclerotic avulsed psoas muscle.

The patient's past history revealed "fracture of bones of the neck and upper and lower back" in 1948, for which he had been treated for two years without further complication. In 1950 he had a "stroke" and, later, caisson disease while working as a diver.

In 1955, while he was a construction worker on the San Rafael-Richmond Bridge, he fell 60 feet from the bridge, striking the right gluteal region and back on a concrete abutment, then tumbled into the Bay. He swam out and pulled himself up onto a pier. The injury was "hindquarter fracture"—relatively uncommon and severe. Roentgenograms revealed a fracture line through the region of the right sacroiliac joint posteriorly, and through both rami of the pubis anteriorly on the right. The right lower extremity and pelvis were displaced upward about 4 cm. The right fifth lumbar transverse process was sheared off by this displacement. Owing to inadequate traction, the patient retained about 2 cm. displacement. Complete bone union failed, partly because of wide spreading of the symphysis pubis. On June 28, 1956, sacroiliac fusion (Campbell) was carried out, which stabilized the pelvis so that the patient could walk quite well. He returned to heavy construction work for about five months but was advised to discontinue it because of residual disability factors.

Four months after the fusion operation he

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Read at a Western Regional Meeting of the United States Section of the International College of Surgeons, August 21, 1958.

had an attack of left renal colic, which cleared in twenty-four hours; then followed two more similar attacks. In January 1958 he complained of colicky pain in the left loin and constant pain in the lower part of the back, the inguinal region and the mid-lower part of the pelvis, radiating down the lower extremity. The pain was exacerbated when he stood for any length of time, walked, or undertook undue exertion. At times it became so severe that he almost lost consciousness. This was partially relieved if he reclined on the left side. A few days prior to admission to the hospital he noticed hematuria and passed blood clots.

On Feb. 12, 1958, he entered St. Mary's Hospital. Examination of the genitourinary tract revealed a palpable, enlarged, tender left kidney. On deep pressure a swollen sensitive area was noted in the abdomen, at the site of the psoas muscle. The left inguinal region also was tender; the testicles were normal. Urinalysis showed a specific gravity of 1.006. The reaction of the urine was alkaline. Albumen and sugar were absent. There were 8 to 10 leukocytes per high dry field. The blood contained 4,280,000 erythrocytes and 11,200 leukocytes per cubic millimeter; the hemoglobin level was 13 Gm.

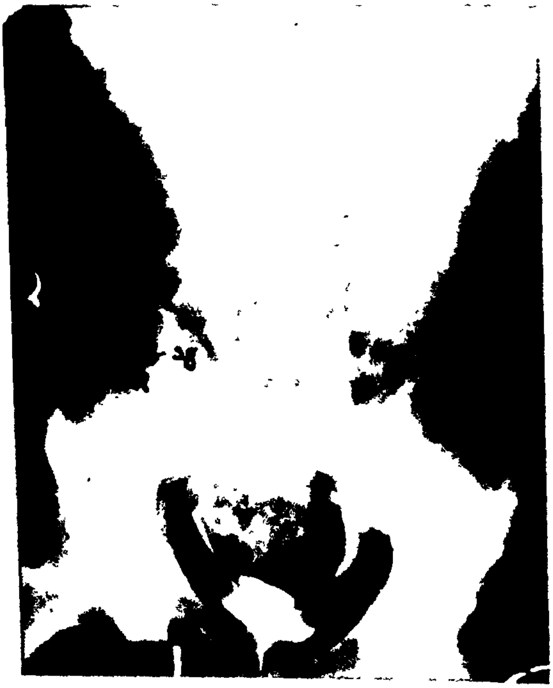

Fig. 1.—Retrograde ureteropyelogram taken with patient in Trendelenburg position. Note oblong shadow cast by avulsed left psoas muscle and depression and displacement of ureter toward midline, giving rise to pyelectasis. Normal ureter and pelvis on right side.

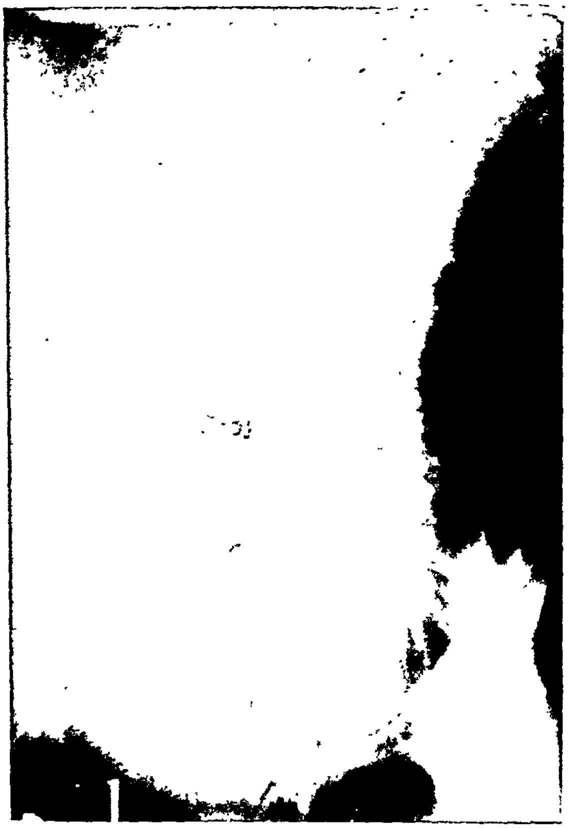

Fig. 2.—Cystogram showing upper displacement of the bladder and right side of body. Note good result of sacroiliac fusion performed three years earlier.

Retrograde Pyelographic Study.—Flat films revealed an oblong mass about 3 by 6 cm. at the site of the left psoas muscle (Fig. 1). When the left ureter was catheterized, urine flowed in a continuous stream indicating obstruction below the renal pelvis. Incidentally, the pain in the kidney was relieved by catheterization, but the pain in the groin, pelvis and thigh persisted. The mass displaced the lower part of the left ureter toward the midline and caused pyelectasis. It was also exerting pressure on the genitocrural and femoral nerves, causing severe pain in the left inguinal region, testicle and thigh. Cystographic study (Fig. 2) revealed distortion of the bladder, the right half being displaced upward with

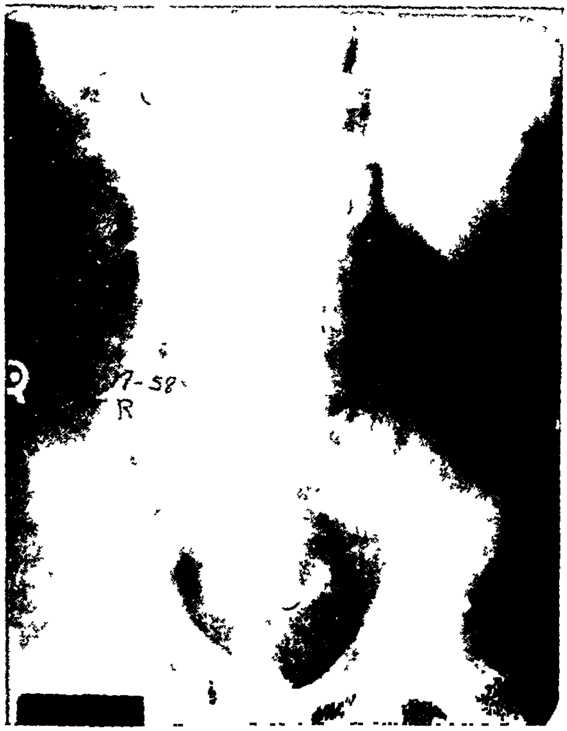

Fig. 3.—Film taken after perirenal air insufflation. Note that no air entered right retroperitoneal space, owing to fibrosis resulting from trauma. Bulging avulsed left psoas muscle and kidney are clearly outlined.

the right side of the body. Both kidneys were fairly well fixed, indicating perinephritis. Indigo carmine appeared in good concentration (Fig. 3) in four minutes in urine from both kidneys (right pelvic capacity 9 cc., left 12 cc.). During perirenal air insufflation no air entered the right retroperitoneal space, because of fibrosis resulting from the healing of a pelvic fracture. The left kidney was visualized and the bulging psoas muscle clearly outlined. Excretory urographic study revealed enlargement of the left kidney and avulsion of the left psoas muscle.

Because of the possibility of injury to the spleen, liver or other organs, operation by the transperitoneal surgical approach was performed by the general surgeon, Dr. Thad J. Whalen. The spleen revealed evidence of former trauma, and the gallbladder contained calculi. There was a retroperitoneal mass on the left side, arising from the promontory of the sacrum, corresponding to the psoas muscle. The peritoneal reflection over the colon on the left side was incised, which exposed the retroperitoneal space. The kidney was in normal position, but the ureter was displaced to the midline and encased in a large mass of fibrosed, avulsed iliopsoas muscle (Fig. 4), from which it was freed. The genitocrural and femoral nerves, also encased in this mass, were liberated. No tumor was encountered. A lymph node was removed for biopsy and revealed hyperplasia with no evidence of tumor.

The patient made an uneventful recovery and left the hospital on March 9, 1956. Since that time he has been free of pain and able to work.

COMMENT

Traumatic avulsion or rupture of the psoas muscle represents a relatively small portion of all injuries to organs of movement. Its occurrence, however, is not so rare as the literature would lead one to believe. At St. Mary's Hospital 3 cases were recorded between 1952 and 1958. Orthopedists agree that indirect violent injury, sufficient to cause avulsion of the

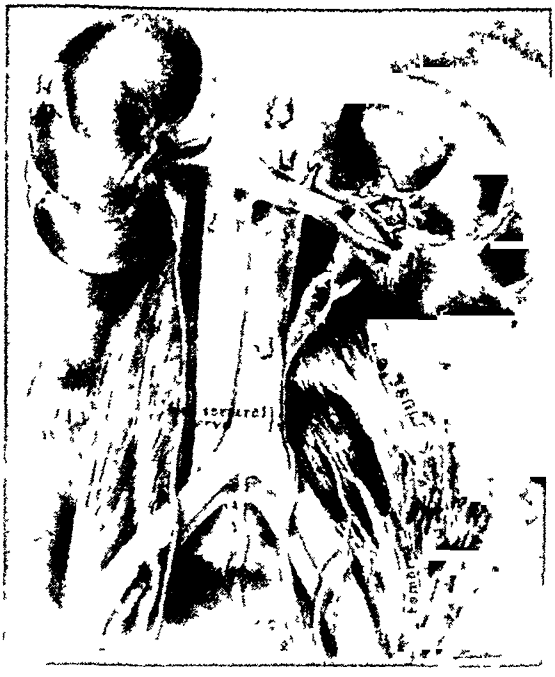

Fig. 4.—Drawing showing avulsion of left psoas muscle, compression and medial displacement of ureter and pressure on genitocrural nerve. Note residual upward displacement of right pelvis and kidney due to previous injury.

psoas, usually fractures the transverse processes of the lumbar vertebrae.

The first instance of rupture of the psoas muscle was chronicled by Galen, who observed it in a Roman gladiator. In 1942 Strandell collected 10 cases from the literature and added 3 of his own, making a total of 13. In 1952 Gaston and Wigglesworth reported an additional case and clarified the clinical symptoms, pain in the hip and lower part of the back (usually due to rupture of nerve fibers). These may disappear within a few hours. Several days later, however, as the hematoma becomes enlarged, it causes irritation of the lumbar plexus, the genitocrural, femoral and obturator nerves, giving rise to paresthesia and analgesia as well as muscle atrophy. Abdominal symptoms due to pressure on the parietal peritoneum by the hematomatous psoas muscle may cause tenderness and muscle spasm simulating appendicitis, diverticulitis, etc. General symptoms consist of fever and leukocytosis and are due to reabsorption of damaged muscle tissue and extravasated blood.

Injury to the psoas muscle may be serious, as there may be secondary hemorrhage as well as damage to the lumbar sympathetic nerves. Fibrosis, which accompanies healing, may exert extrinsic pressure on or displacement of the ureter, causing back pressure and hydronephrosis of the kidney, as was noted in the case here reported. Also, the genitocrural nerve, which forms in the psoas muscle, may be encased in the fibrotic process and cause intractable pain.

After violent injury, avulsion or rupture of the psoas muscle may be suspected by the characteristic clinical symptoms—pain and analgesia in the lower part of the back, the pelvis, the groin and the thigh. When the ureter is involved there may be pain in the affected kidney. A good roentgenogram will reveal swelling and bulging of the psoas muscle. Preliminary catharsis will assure better films. Retroperitoneal air insufflation clarifies the outline of the distorted psoas muscle. Retrograde and intravenous urographic studies are invaluable in visualizing the course of an obstructed ureter.

Perusal of the literature reveals no other instance in which the psoas muscle was avulsed in this particular manner—with no fracture of the transverse processes of the lumbar vertebrae. In this instance avulsion was not suspected and would not have been diagnosed except for the precise information obtained by urologic investigation. The collaboration of the orthopedist, urologist and general surgeon were of the utmost importance in the proper diagnosis and treatment and in the final relief of this patient.

ZUSAMMENFASSUNG

Es wird über einen Patienten berichtet, der infolge eines Abrisses des Psoasmuskels unter Nierenkoliken und unbeeinflussbaren Schmerzen in der unteren Hälfte des Rückens, im Becken und im Oberschenkel litt. Die fibrösen Veränderungen innerhalb und in der Umgebung des abgerissenen Psoas, die nach einer drei Jahre vorher erfolgten Verletzung auftraten, führten zu einer Verlagerung und Zusammendrückung des Harnleiters und zu Anfällen von Nierenkoliken. Die Fibrose schloss auch den N.genitofemoralis ein, was zu den unbeeinflussbaren Schmerzen im Ausbreitungsgebiet des Nerven führte. Die durch eine umfassende urologische Untersuchung (Zystoskopie. retrograde und exkretorische Urographie und perirenale Lufteinblasung) gewonnenen Befunde führten zur Diagnose. Heilung erfolgte durch Loslösung des Harnleiters und des N.genitofemoralis und des N.femoralis.

RESUMEN

Se presenta el caso de un enfermo con cólicos renales y con dolores intratables en la región sacra, pelvis y muslos, debidos a

un desgarro del psoas. Una reacción fibrosa en el lugar del desgarro y a su alrededor (a los 3 años del trauma que originó la rotura), desplazaba y comprimía el uréter, y daba lugar a los cólicos renales. También afectaba al nervio genitocrural, ocasionando dolores en su área tributárea.

Se llegó al diagnóstico tras una exploración urológica completa—cistocopia, pielografías ascendente y descendente y radiografías. Una liberación de las adherencias que comprimían los nervios femoral y genitocrural y una ureterolisis hicieron cesar los dolores.

RÉSUMÉ

L'auteur rapporte un cas de coliques rénales avec douleurs lombaires rebelles, douleurs au niveau du pelvis et de la cuisse, dues à l'avulsion du muscle grand psoas à la suite d'un accident datant de trois ans. La fibrose s'étant développée à l'intérieur et autour du muscle avait provoqué le déplacement et la compression de l'uretère, avec atteinte du nerf génitocrural. Le diagnostic a été posé grâce à un examen urologique complet (cystoscopie, pyélographie rétrograde, urographie descendante, insufflation périrénale d'air). Guérison par urétérolyse et libération du nerf génitocrural et du nerf fémoral.

RIASSUNTO

Viene riferito il caso di un malato che soffriva di dolori colici violenti e resistenti alle cure, localizzati alla regione sacrale, alla pelvi a all'anca, consecutivi all'asportazione del muscolo psoas che era avvenuta tre anni prima in conseguenza di un trauma. La fibrosi cicatriziale nella sede del *muscolo asportato spostava* e *comprimeva* l'uretere causando queste coliche di tipo renale, e interessava anche il nervo genitocrurale causando un dolore intollerabile *nella regione innervata da tale nervo.* La diagnosi fu formulata soltanto dopo un completo esame urologico del paziente (cistoscopia, pielografia ascendente, urografia e pneumorene), e la guarigione si ottenne dopo l'ureterolisi e la liberazione del nervo genitocrurale e femorale.

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The greatest art is in the concealment of art, and I may say that we of the medical profession excel in this respect.

Medicine is a science of uncertainty and an art of probability.

Absolute diagnoses are unsafe. and are made at the expense of the conscience.

—*Osler*

Nephropexy; An Evaluation

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Pointing out that their experience of twenty-six years of treating nephroptosis indicates that no particular signs or symptoms form a dependable basis for predicting the results of nephropexy, the authors emphasize the fact that this operation is one to be approached with the utmost caution. When mature and honest appraisal have established the indications as far as is humanly possible, however, nephropexy is not only justified but helpful. Of 88 patients with troublesome to severe distress it enabled the authors to relieve 29 entirely and to bring about significant improvement in 18. The results of their study of this procedure and its results are tabulated.

A CAUTIOUS approach to nephropexy is essential if satisfactory postoperative results are to be obtained. A careful and sometimes prolonged and repeated analysis of symptoms and urographic abnormalities should be made before this operation is performed.

Review of the literature of the past ten years on the subject of nephroptosis and nephropexy reveals a remarkable uniformity of opinion as to the symptom potential of ptosis of the kidney and the virtue of nephropexy in curing the symptoms. While the writers go to some pains to emphasize that ptosis *per se* is not an indication for surgical treatment, they nevertheless are equally emphatic in stating that ptosis can cause urinary obstruction with resultant pain, pyelectasis and infection; gastrointestinal symptoms due to pull on the celiac axis, the duodenum or the colon, and intolerable nervousness as a separate and distinct symptom. In such cases nephropexy is considered indicated. In 1952 Burford, Gleen and Burford reported an astounding 93 per cent cure of symptoms in a large series of 304 cases in which nephropexy was performed, out of 711 cases of nephroptosis studied. In more than half of these, however, there were obstructive lesions other than the ptosis itself, so that the nephropexy must be considered an incidental rather than a primary procedure. They feel that persistence of pain, hematuria, hydronephrosis, infection, or diminishing phenolsulfthalein excretion, singly or in combination, constitutes indications for nephropexy, and this view is largely supported by other writers.

The sole serious dissenters, at least in print, would seem to be Braasch and his co-workers, who agree that, when ptosis causes such symptoms, nephropexy should be done, but raise the question "how can one know with certainty when the ptosis is causative and when it is merely coincidental?" Of 230 patients with nephroptosis they referred only 21 for nephropexy and had the discouraging experience of

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Read at the Twenty-Third [illegible] Congress of the [illegible] States [illegible] International [illegible] Los Angeles, March [illegible]

From the Department of [illegible] Los Angeles [illegible] curing only 3, while 8 more were improved. They emphasized the great difficulty of determining the role of the ptosis itself with any degree of accuracy.

Burford and his co-workers stated that persistence of symptoms in patients who have had nonsurgical treatment is an indication for nephropexy, but this is obviously no advance in determining the part played by the ptosis. In Dodson's opinion, pyelectasis in a case of ptosis incriminates the ptosis *per se.* He pointed out also the high incidence of renal disease associated with ptosis, and objected to Braasch's elimination of complicated cases of ptosis, which gives his figures a distorted bias against nephropexy. Hess and his coworkers consider the old sign of pain when up and relief when down still the most significant symptom indicating nephropexy. Jones and Price noted that there were only 4 unsatisfactory results in 26 cases; the 4 patients failed to get relief of their pain by assuming the Trendelenburg position. Ritter and Begnes find reproduction of the pain by distention of the renal pelvis a good index of the success to be anticipated from operation. An interesting difference in point of view is evidenced by the argument on one hand that failure of a kidney corset to relieve the symptoms makes operation necessary, and on the other hand that if a kidney corset does relieve the symptoms one has a good reason for suspending the kidney, thus obviating the necessity for using the belt.

Case Analyses. — The difficulty, however, is that none of the criteria just enumerated may be of any help in the individual case. We have found pyelectasis relieved by nephropexy, while symptoms persist. In the cases of 2 women we recorded our opinion that nephropexy would be of no help, because of the absence of any demonstrable pyelectasis, but when they insisted on having the operation and assumed all responsibility for poor results from it, both were completely relieved after nephropexy. This apparent absence of correlation of symptoms and signs with surgical results stimulated our search for some prognostic factors in patients with ptosic kidneys and a symptom complex.

In an effort to correlate preoperative symptoms and signs with postoperative results we have compiled data from case records in our private patient file and in the file of the White Memorial Clinic of all patients on whom nephropexy was performed from 1932 to June 30, 1957 inclusive (twenty-five years). There were 188 such patients. Sixty-nine of these were eliminated from the study because a follow-up of more than six months could not be obtained. Of the 119 remaining cases, nephropexy was done as a primary procedure in 88 and combined with another operation in 31 (Table 1). When ureterolysis and/or renal sympathectomy were done, the procedure was an integral part of the nephropexy; in the tabulation of results these are considered one operation and are included with nephropexy done as a primary procedure. Patients on whom pyeloureteroplasty, pyelolithotomy or nephrolithotomy was performed are evaluated separately from those who underwent primary nephropexy.

Method of Estimating Results.—The results as tabulated here are mainly symptomatic results. They were obtained either by interview with the patient or by follow-up report by mail, and the data were compiled from the answers the patients gave. The following list of the questions and a tabulation of the answers includes patients who underwent other major surgical procedures on the kidney in addition to nephropexy.

1. What results have you had from the operation? (Check one.) Well. Improved. Same. Worse.

2. Do you now have any of the symptoms

which were to be cured by the operation? Yes. No.

3. If you still have these symptoms are they worse, the same, or less, than before the operation?

4. Do you have any trouble that you attribute to the operation? Yes. No.

5. Do you have other trouble with your kidneys or bladder that is not related to the operation? Yes. No.

Results as shown by urographic data were good in all cases of primary nephropexy in which urograms were taken postoperatively. It is well known, however, that many patients continue to have symptoms even though the urogram shows the kidney to be in good position. A normal or high position of the kidney as shown by urograms, therefore, is not necessarily an indication that the results of the nephropexy are good.

Comparison of Clinic or Ward Patients with Private Patients.—The results obtained from nephropexy performed on clinic or ward patients were poorer than those for private patients (Table 2). The former were studied, appraised and operated on by numerous attending men and residents, while the latter were managed by our group in our private office.

Correlation of Preoperative Symptoms with Postoperative Results. — Thirty-six patients with pain in the involved side received no help from nephropexy, while 40 were improved or cured (Table 3). Of patients who noted increase of their *pain* in the erect position, 18 were benefited and 13 were not. Relief of pain obtained by lying down was evenly distributed between the two groups; and the number of patients (7) who were helped by use of a kidney belt was not statistically significant. We question the renogastric reflex or *nervousness* as prognostic aids, since only 11 patients with such complaints were benefited as against 9 who were not. The association of such urinary complaints as frequency of voiding, dysuria, hematuria, urgency, etc., was not significant.

TABLE 1.—*Material for Report*

Total number of nephropexies reported	119
Nephropexy as primary procedure	88
Nephropexy combined with another procedure	31

TABLE 2.—*Private and Clinic Patients: Comparison of Results*

	Private	*Clinic*
Number of primary nephropexies	60	28
Patients cured	24 (40%)	5 (18%)
Patients improved	16 (26.7%)	2 (7%)
Condition same	19 (31.7%)	20 (71.4%)
Condition worse	1 (1.6%)	1 (3.6%)

TABLE 3.—*Correlation of Symptoms Generally Considered Indication for Nephropexy: Results*

	Cured	*Improved*	*Same*
Pain on ptotic side	24	16	34
Pain increased by standing or exercise	14	4	13
Pain increased by lying down	4	2	6
Nervousness; gastrointestinal symptoms; fatigue	7	4	9
Urinary symptoms (dysuria, pyuria, hematuria)	19	15	31

Correlation of Preoperative Urographic Data with Results from Nephropexy.—Dilatation of the Renal Pelvis: Some urologists maintain that nephropexy is never indicated unless there is dilatation of the renal pelvis, demonstrable urographically. They contend that nephroptosis without obstruction to the outflow of urine does not produce pain. Others are convinced that tension or drag on the renal pelvis by a ptosed kidney causes pain and that obstruction to the outflow of urine may not be a factor in many cases. The data in Table 4 show that, while absence of any pyelectasis frequently prognosticates a

TABLE 4.—*Correlation of Presence and Degree of Pyelectasis with Results*

Degree of Pyelectasis	*No. of Cases*	*Cured*	*Improved*	*Same*	*Worse*
None	34	8	5	19	2
1st	36	15	7	13	1
2d	15	7	7	3	
3d	3	1	2		

TABLE 5.—*Correlation of Degree of Ptosis with Results*

Degree of Ptosis	*No. of Cases*	*Cured*	*Improved*	*Same*	*Worse*
1st	24	7	8	7	2
2d	27	7	5	15	
3d	32	12	7	13	
4th	4	3	1		

poor therapeutic result, the degree of pylectasis when present cannot be used as an index of the results to be expected. Patients upon whom pyeloureteroplasty was done at the time of nephropexy are not included in this tabulation.

Degree of Ptosis: In general, patients with marked ptosis obtained the best results from nephropexy (Table 5). Otherwise the degree as shown by preoperative urographic study is not significant in prognosticating results.

Correlation of Surgical Technic with Postoperative Results.—The technics employed were grouped into four classes: (1) combined stripping and fixation of the renal capsule and construction of a sling by suture of the adipose fascia to the lumbar muscles (Fish and Hazzard, Albarran, Edebohl, Young, Horsley); (2) fixation sutures through the intact renal capsule and construction of a sling from the adipose fascia (Kelly); (3) the use of an adipose sling only (Demming, Dodson) and (4) stripping and fixation of the capsule without the adipose fascia sling (Randall and Campbell, Strode, Vogel).

The results of this correlation are given in Table 6. It is apparent that the method used in fixing the kidney in place has little bearing on the results obtained.

During the past twelve years most of the operations in our private cases have been done by the combined method, as follows: The renal capsule is stripped from the upper half of the kidney and is rolled downward on both the ventral and the dorsal surface of the kidney. Sutures of No. 1 chromic catgut are placed through this rolled capsule; those in front are inserted above the twelfth rib, and those behind are passed through the lumbar muscles near the attachment of the diaphragm. They are tied while the kidney is held up in place. The adipose fascia is then sutured to the lumbar muscles below the lower pole of the kidney.

Correlation of Time of Postoperative Ambulation with Results. — During the past ten years most of the patients have been ambulatory on the second to the fourth postoperative day. A many-tailed (Scultetus) binder has been applied immediately after the operation and kept tight and worn constantly for four weeks. It is our contention that a sudden strain, such as is caused by coughing, sneezing or laughing, is more likely to break the kidney loose from its fixation than is standing or walking in the upright position. Postoperative pyelograms show that the results are as good when the patient is allowed to be up during the first week as when he is kept in bed for several weeks.

Comparison of Results Between Nephropexy Performed as a Primary Procedure and Combined with Another Operation on the Kidney.—In 31 patients nephropexy was done in conjunction with another major procedure on the kidney. In most of these it is probable that the results obtained after the operation were due more to the other procedure than to the nephropexy. When ureterolysis and/or renal sympathectomy were done in conjunction with

TABLE 6.—*Correlation of Technic of Nephropexy with Results*

Type of Nephropexy	*No. of Cases*	*Cured*	*Improved*	*Same*	*Worse*
Capsule stripped and fixed; Gerota fascia sling	37	15	7	14	1
Capsule stripped and fixed to psoas fascia and ribs	31	11	7	12	1
Sutures through capsule and kidney to psoas	27	7	5	13	2
Sutures through capsule; and Gerota fascia sling	18	10	4	3	1
Gerota fascia sling alone	6	4	1	1	

TABLE 7.—*Comparison of Results of Nephropexy Alone and Combined with Other Procedures*

Procedure	*No of Cases*	*Cured*	*Improved*	*Same*	*Worse*
Primary nephropexy	88	29 (33%)	18 (20.5%)	39 (44.3%)	2 (2.2%)
Nephropexy with pyelithotomy or ureterolithotomy	14	11 (78.6%)	1 (7.1%)		2 (14.3%)
Nephropexy with miscellaneous procedures*	17	7 (41.2%)	5 (29.4%)	4 (23.5%)	1 (5.9%)

*Exploration of kidney
Renoplasty for caliectasis
Decapsulation
Pyeloureteroplasty
Excision of renal cyst
Division of horseshoe kidney

TABLE 8.—*Comparative Results of Nephropexy Alone and Combined with Sympathectomy*

Procedure	*No. of Cases*	*Cured*	*Improved*	*Same*	*Worse*
Nephropexy alone	66	21 (31.8%)	16 (24.2%)	27 (40.9%)	2 (3.1%)
Nephropexy with sympathectomy	22	8 (36.4%)	2 (9%)	12 (54.5%)	

nephropexy, it was counted as primary nephropexy. When pyelolithotomy or nephrolithotomy was done as the primary procedure and nephropexy was incidental, the results were better than when some other renal operation was performed with nephropexy (Table 7).

Denervation of the renal pedicle (sympathectomy) was done a few years ago in an effort to relieve nephralgia of unknown origin. It consisted of stripping the nerves from the renal vessels and the pelvis, thus attempting to remove the paths by which pain sensation was carried from the kidney. We have not done this procedure during the past ten years, but there are some urologists who continue to do it. The recorded results of this procedure (Table 8) indicate that sympathectomy offers little, if any, additional benefit.

COMMENT AND CONCLUSIONS

Attempts to correlate the preoperative symptoms and signs revealed by patients with renal ptosis with the results to be expected from nephropexy proved quite disappointing. Far from establishing any particular symptom or symptom complex as a significant prognostic tool, the authors' statistics largely contradict the value of those features offered as prognostic aids in the literature of the past ten years. As indicated by the tables, the degree of ptosis and of pyelectasis has [illegible] cance, and that questionable, only in the extremes. The features of nephroptosis generally considered of renal prognostic significance frequently have no such value.

Nevertheless, of 88 patients with troublesome to severe distress the authors were able entirely to relieve 29 and significantly to improve 18, which justifies the procedure when honest appraisal leads one to believe it should be helpful. The authors agree with Braasch that, after utilizing every measure available for such appraisal, the urologist still can have only an educated guess at the results. The significantly better results in private cases over clinic cases probably reflects the value of mature and exhaustive appraisal.

Speaking from general impressions gained during this study, the authors agree with Braasch also that one should hesitate to perform nephropexy on a patient whose pain is vague and associated with general complaints of fatigue, headache and nervousness; the patient who has similar pain in both sides, the midback, and the breast, in the shoulder, etc.; and the patient who has previously experienced great relief from every form of therapy, only to have her distress recur a little later. Better results may be anticipated if the patient describes definite, persistent pain, localized to the area of the ptosed kidney (Braasch; Hess et al.).

Study of the authors' cases of nephroptosis treated over a period of twenty-six years indicates that no particular signs or symptoms constitute a really dependable basis for prognosticating the results of nephropexy.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Versuche, die präoperativen Beschwerden und Krankheitszeichen von Patienten mit Nierensenkung mit den von einer Nephropexie zu erwartenden Erfolgen in Beziehung zu setzen, haben sich als recht enttäuschend erwiesen. Weit entfernt davon, irgendwelche besonderen Krankheitsziechen oder Symptomenkomplexe als bezeichnende Hilfsmittel in der Prognose anzusehen, widerlegen die Verfasser in ihren Statistiken sehr erheblich die Brauchbarkeit von Befunden, die im Schrifttum des letzten Jahrzehnts als prognostiche Kriterien angeboten worden sind. Ihre Tabellen zeigen, dass der Grad der *Senkung und der Nierenbeckenerweiterung* eine gewisse wenn auch nicht einwandfreie Bedeutung in extremen Fällen hat. Die allgemein als prognostich wichtig angesehenen Charakteristiken der Nierensenkung sind häufig wertlos.

Nichtsdestoweniger ist es den Autoren gelungen, 29 von 88 Kranken mit lästigen bis heftigen Beschwerden völlig symptomfrei zu machen und 18 zu bessern. Dieser Erfolg rechtfertigt das Verfahren, wenn eine ehrliche Auswertung zu der Annahme führt, dass dem Kranken geholfen werden kann. Die Verfasser stimmen mit Braasch in der Meinung überein, dass der Urologe auch nach Ausnützung aller verfügbaren prognostischen Möglichkeiten nicht mehr als hoffen kann, dass der Eingriff zu einen Erfolge führt. Dass die Resultate bei poliklinischen Patienten weniger gutsind als bei Privatpatienten sind, beweist wahrscheinlich, wie wichtig eine auf Erfahrung begründete und erschöpfende Auswertung des Falles ist.

Die allgemeinen Eindrücke, die die Verfasser während der vorliegenden Untersuchungen gewonnen haben, führen sie dazu, mit Braasch auch darin übereinzustimmen, dass man mit der Ausführung einer Nephropexie zurückhaltend sein soll, wenn der Patient nur über unbestimmte und mit Müdigkeit, Kopfweh und Nervosität verbundene Schmerzen klagt, wenn er ähnliche Schmerzen in der Schulter, im Rücken, in der Seite oder in der Brust hat, oder wenn alle möglichen anderen Behandlungsmethoden vorher zu einer grossen Besserung der Beschwerden geführt haben, ein

Rückfall jedoch sehr bald wieder eintrat. Mehr Berechtigung zur Hoffnung auf Erfolg hat man bei Patienten, die über bestimmte dauerhafte in der Gegend der gesenkten Niere lokalisierte Schmerzen klagen (Braasch; Hess u.A.).

Das Stadium der Fälle von Nierensenkung, die die Verfasser in einem Zeitraum von 26 Jahren behandelt haben, ergibt, dass keinerlei besondere Krankheitszeichen oder Beschwerden eine wirklich zuverlässige Basis zur Prognose der Ergebnisse der Nephropexie abgeben.

RÉSUMÉ ET CONCLUSIONS

Des essais de corrélation entre les symptômes pré-opératoires et les résultats de la néphropexie dans les cas de ptosis rénale se sont révélés décevants. Les statistiques des auteurs sont en nette contradiction avec les signes de pronostic proposés dans la littérature de ces dix dernières annés. Comme l'indiquent les tableaux, le degré de ptose et de de pyélectasie one uñe certaine valeur—elle-même problématique—dans les cas extrêmes, que l'on peut fréquemment dénier aux symptômes de la néhpoptose auxquels est en général accordée une grande valeur au point de vue du pronostic. Les auteurs ont au cependant enregistré, sur 88 cas bénins à graves, 29 quérisons complètes et 18 améliorations, résultats qui légitiment la néphropexie lorsqu'elle dictée par une évaluation judicieuse. Les auteurs sont en accord avec Braasch, selon lequel l'urologiste, après avoir recouru à tous les moyens à disposition pour une telle appréciation, ne peut que se livrer à des conjectures quant au pronostic. Les résultats nettement supérieurs des cas de clientèle privée sur les cas hospitaliers indiquent la valeur d'une appréciation mûrement approfondie de chaque cas.

Partant d'impressions générales recueillies au cours de cette étude, les auteurs sont égalment d'accord avec Braasch sur le point suivant : il faut hésiter à pratiquer une néphropexie chez les malades présetant une douleur vague associée à des symptômes de fatique générale, à des céphalées et à un état de nevosité générale; en cas de douleurs bilatérales médiodorsales, thoraciques, des épaules, etc; en cas de récidive aprés une thérapeutique quelconque. De meilleurs résultats peuvent être obtenus lorsque la douleur est bien définite, persistante et localisée au niveau du rein ptosé (Braasch, Hess et al.).

Il ressort de l'étude des cas de néphroptose traités par les auteurs durant une période de 26 ans, qu'aucun signe ou symptôme particulier ne constitue une base réellement solide et sûre pour le pronostic des résultats de la népropexie.

RIASSUNTO E CONCLUSIONI

Ogni tentativo di mettere in rapporto in segni clinici della ptosi renale con i resultati che si ottengono dalla nefropessia si dimostraprivo di valore. Lungi dall'attribuire a quaksivoglia segno o complesso di segni il minimo valore prognostico, le ricerche dell'autore dimostrano che quegli elementi che in passato erano ritenuti validi a questo scopo non lo sono affatto.

Cionondimeno su 88 malati con disturbi di grado vario l'autore ha ottenuto la guarigione in 29 e un notevole miglioramento in altri 18. Egli è d'accordo con Braasch che, valutati tutti gli elementi, la previsione del risultato è sempre difficile.

E' del parere, inoltre, che si deve essere molto cauti nel fare la nefropessia a un malato che abbia soltanto dolori vaghi, facile affaticamento, cefalea, irritabilità, oppure che abbia dolori bilaterali, o al petto, alle spalle etc.; o aun malato che abbia già ottenuto miglioramenti con qualunque altro tipo di terapia tentato in precedenza, ma con ricomparsa dei disturbi a breve distanza di tempo. I risultati migliori si possono ottenere, invece, in quei malati che descrivono il loro disturbo come un dolore ben definito, persistente.

localizzato in corrispondenza del rene ptosico.

La conclusione dello studio di un gruppo di malati curati per la nefroptosi in un periodo di 26 anni è che non esiste alcun segno clinico che possa far prevedere, prima dell'intervento quale sarà il risultato definitivo.

RESUMEN Y CONCLUSIONES

Todos los intentos hechos hasta hoy para correlacionar le sintomatología de la ptosis renal con los resultados que cabrían esperarse de la nefroplexia han sido inútiles.

Lejos de querer dar valor de pronósico a un síntoma aislado o a un síndrome, el autor presenta una estadística que contradice todos los intentos de hacerlo así que han aparecido en la literatura durante los últimos 10 años. Como aparece en dicha estadística, la significación pronóstica que tienel grado de ptosis o el grado de prelectasia solo tiene valor en casos extremos; por lo general la forma de la ptosis renal no tiene interés pronósico.

Sin embargo, puesto que entre 88 enfermos que aquejaban desde molestias ligeras hasta dolores intensos se logró la curación de 29 y la mejoría de 18, el tratamiento empleado está justificado, siempre que una apreciación sincera de los síntomas lleve al criterio de que aquél será útil. El autor está de acuerdo con Braasch en que, después de usar todos los medios para llegar a esa apreciación, el urólogo sólo puede hacer suposiciones sobre los resultados.

El que los resultados en la práctica privada del a profesión sean mejores que en los enfermos de clínica, da idea del valor que tiene una exploración detenida y completa.

En cuanto a las impressiones generales que se derivan de este estudio, los autores están también de acuerdo con Braasch en que no es aconsejable practicar la nefroplexia en enfermos que se quejan de dolores vagos, asociados con astenia, cefálesas y nerviosismo; tampoco en aquellos que padecen dolores similares en ambos lados, o en la espalda, hombro y pecho, ni en los que mejoran considerablemente con cualquier tratamiento aunque enseguida vuelven a empeorar. En combio, aquellos enfermos que padecen dolores fijos y persisentes, en el área del riñón caído son los que más mejoran con la intervención.

El estudio de todos los casos de nefrosis que durante 26 años han observado los autores indica que la sintomatología de esta enfermedad no presenta ningún signo sobre el que puede basarse claramente el pronóstico.

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Neurologic Surgery

Laminectomy in Patients with Injuries of the Spinal Cord*

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The author presents a statistical study of the value of laminectomy in the treatment of patients with injuries of the spinal cord. He points out the difference of opinion on this topic and offers a basis for determining whether laminectomy is or is not indicated, namely, the presence or absence of a spinal manometric block.

Other features of the study are presented in tabular form, with general comments by the author.

A WIDE difference of opinion exists concerning the indications for laminectomy in patients with recent closed traumatic lesions of the spinal cord. Some surgeons maintain that all acute injuries of the cord require laminectomy: others, that there are relatively few indications.

After reviewing the results in the cases of 579 laminectomized and 279 nonlaminectomized patients in a previous study, I concluded that the presence or absence of a spinal manometric block is a basic criterion upon which to operate.[1]

The purpose of this paper is to compare the results of my first study to those obtained with an additional 89 recently discharged patients.

Comparison of Results.—The degree of improvement, as presented in the tables, is as follows: as long as functional sensory or motor return was observed in two segments or more, it was recorded as improvement.

The first study showed that 92 (16 per cent) of 579 laminectomized patients and 80 (29 per cent) of 279 nonlaminectomized patients showed some improvement. The second study showed that 16 (25 per cent) of 64 laminectomized and 15 (60 per cent) of 25 nonlaminectomized patients showed some improvement. Therefore, a grand total of 108 (17 per cent) patients of 643 laminectomized patients and 95 (31 per cent) of 304 nonlaminectomized patients showed some improvement (Table 1).

The first study showed that the order of improvement, according to vertebral level, for both the laminectomized and the nonlaminectomized patients was (1) lumbar, (2) cervical and (3) thoracic. The second study showed the following order of improvement: (1) cervical, (2) lumbar and (3) thoracic. The order of improvement in the combined study was: (1) lumbar, (2) cervical and (3) thoracic (Table 2).

[illegible]

[illegible]

[illegible]

[illegible]

TABLE 1.—*Improvement with and without Laminectomy: Time Element*

First Study

With laminectomy	Total No. of Patients	No. of Improved	Per Cent Improved
1-12 hr.	97	15	16
12-24 hr.	86	12	14
24-48 hr.	36	10	28
48-72 hr.	22	6	27
3 days-1 wk.	63	9	14
1 wk.-1 mo.	125	25	20
1 mo.-3 mo.	70	6	9
3 mo.-6 mo.	37	5	14
6 mo.-1 yr.	26	3	12
Over 1 yr.	17	1	6
Total	579	92	16
Without laminectomy	279	80	29
Total	858		

Second Study

With laminectomy	Total No. of Patients	No. of Improved	Per Cent Improved
1-12 hr.	14	4	29
12-24 hr.	15	2	13
24-48 hr.	7	4	57
48-72 hr.	6	3	50
3 days-1 wk.	3	1	33
1 wk.-1 mo.	7	0	0
1 mo.3- mo.	5	2	40
3 mo.-6 mo.	4	0	0
6 mo.-1 yr.	3	0	0
Over 1 yr.	0	0	0
Total	64	16	25
Without laminectomy	25	15	60
Total	89		

Combined Study

With laminectomy	Total No. of Patients	No. of Improved	Per Cent Improved
1-12 hr.	111	19	17
12-24 hr.	101	14	14
24-48 hr.	43	14	33
48-72 hr.	28	9	32
3 days-1 wk.	66	10	15
1 wk.-1 mo.	132	25	19
1 mo.-3 mo.	75	8	11
3 mo.-6 mo.	41	5	12
6 mo.-1 yr.	29	3	10
Over 1 yr.	17	1	6
Total	643	108	17
Without laminectomy	304	95	31
Total	947		

In neither of the studies was there a single patient who improved in the presence of manometric block without laminectomy (Table 3).

The first study showed that 1 per cent of the laminectomized patients and 6 per cent of the nonlaminectomized patients were discharged walking without aids of any kind. The second study showed that none of the laminectomized and 8 per cent of the nonlaminectomized patients were discharged walking without aids of any kind. The combined study showed that 1 per cent of the laminectomized and 6 per cent of the nonlaminectomized patients were discharged walking without aids of any kind (Table 4).

Table 5 shows that 9 patients out of 89 are ambulatory with prosthetic aids. Four of the 9 had been laminectomized and could walk for short distances with prosthetic appliances, but for practical purposes wheelchairs were required. The remaining 5 patients had not been laminectomized; 2 could walk without aids of any kind, 1 could walk with 2 Canadian crutches and two short leg braces, and 2 could walk short distances (one with two canes, the other with a walker). For practical purposes, however, the 2 last mentioned required wheelchairs.

COMMENT

The results of the second, although smaller, study confirm those of the first study.

It is my opinion that the absence of block, in general, indicates that the neural structures are not being continuously seriously compressed, that maximum destruction has already occurred and that nothing is to be gained by laminectomy. The presence of a block, however, remains an indication for decompressive intervention, because it offers the patient some chance of improvement.

In both studies, patients with complete

TABLE 2.—*Improvement with and without Laminectomy: Vertebral Level*

	With Laminectomy			*Without Laminectomy*		
	No. of Patients	*No. Improved*	*Per Cent Improved*	*No. of Patients*	*No. Improved*	*Per Cent Improved*
First Study						
Cervical	61	12	20	115	36	31
T 1-6	115	10	9	32	3	9
T 7-12	285	32	11	84	16	19
Lumbar	118	38	32	48	25	52
Total	579	92	16	279	80	29
Second Study						
Cervical	24	10	42	17	13	76
T 1-6	7	1	14	1	0	0
T 7-12	21	2	6	4	1	25
Lumbar	12	3	25	3	1	33
Total	64	16	25	25	15	60
Combined Study						
Cervical	85	22	26	132	49	37
T 1-6	122	11	9	33	3	9
T 7-12	306	34	11	88	17	19
Lumbar	130	41	31	51	26	50
Total	643	108	17	304	95	31

blocks and without laminectomy did not improve; only a relatively few of those with complete block, however, as a result of laminectomy; in other words, a number of patients with block have been laminectomized needlessly. This shows that no reliable method is available as yet for determining which patients with manometric block should not be laminectomized. The roentgen appearance of the vertebrae does not supply such a method. I have seen patients with excellent alignment and without neurologic improvement and others with improvement despite malalignment.

In my opinion a progressive neurologic deficit indicates laminectomy and a progressive neurologic recovery contraindicates it. Table 1 shows that laminectomy, when indicated, need not be done immediately in all cases. In the first study, some patients benefited by operation delayed up to one year. Laminectomy after more than one year, however, had no practical value except when it was done exclusively for psychic reasons, at the patient's specific request. The conservative attitude toward immediate laminectomy serves a threefold purpose: 1. It provides time in which edema may recede and with it the manometric block that was present immediately after injury, making laminectomy unnecessary according to my criterion. Frequently, operative reports of very early laminectomy reveal that there was "a sudden expulsion of the cord" when the dura was incised. The sudden release of pressure may have caused prolapse and destruction of what intact tracts may have remained after injury. 2. The physician can examine the patient thoroughly for other complications such as injury to internal organs, damage to the brain or osseous fracture. 3. The preparation of the patient for surgical treatment is improved by treating the systemic shock as against the spinal shock.

Although the literature contains reports of early laminectomy for cervical lesions without immediate operative deaths,

TABLE 3.—*Relation of Manometric Evaluations and Improvement*

	No. of Patients	Number Improved	Per Cent Improved
*First Study**			
Block			
Laminectomy	100	12	12
No laminectomy	25	0	0
No Block			
Laminectomy	21	6	29
No laminectory	106	40	38
Total	252	58	
*858 patients in study (252 manometric tests).			
*Second Study***			
Block			
Laminectomy	19	3	16
No laminectomy	2	0	0
No Block			
Laminectomy	3	3	100
No laminectomy	19	14	74
Total	43	20	
**89 patients in study (43 manometric tests).			
Combined Study†			
Block			
Laminectomy	119	15	13
No laminectomy	27	0	0
No Block			
Laminectomy	24	9	33
No laminectomy	125	54	43
Total	295	78	
†947 patients in study (295 manometric tests).			

TABLE 4.—*Ambulation without Aids*

	With Laminectomy	Without Laminectomy
1st study	7/579, or 1%	16/279, or 6%
2nd study	0/ 64, or 0%	2/ 25, or 8%
Combined study	7/643, or 1%	18/304, or 6%

one must not overlook the deaths occurring in the remote postoperative period from hemothorax, atelectasis, etc. Considering how few remarkable results follow laminectomy in patients with cervical lesions and manometric blocks, I cannot condone immediate laminectomy for these patients.

I have recently observed 2 patients with cervical lesions who lost normal voluntary control of the hands after laminectomy. Scheibert has proposed that perhaps the mishap is not due to the operation but occurs during anesthesia when hyperextension is used for endotracheal intubation.[2] His suggestion that local anesthesia be used for cervical laminectomy therefore seems well founded.

Many patients arrive with a history of laminectomy performed while the patient was unconscious. The functional returns of these patients have not been remarkable; I cannot see the rationale of immediate laminectomy, therefore, in the presence of a state of unconsciousness.

One must not imply from the foregoing that time does not play a role. Once a decision has been reached to operate, the operation should be done immediately. Too often indications are based on emotions rather than on scientific facts. A familiar and frequently heard suggestion is, "If we're going to give this patient a chance to walk, he must have a laminectomy!" Yet, how many laminectomized patients ever walk (Tables 4 and 5)?

In the first study I concluded that functional return was greatest in patients with lumbar lesions, since injuries of the cauda equina are similar to peripheral nerve lesions. The second study, however, though admittedly smaller, indicates that more improvement occurred in the patients with cervical lesions. Perhaps this reversal of order of improvement can be explained by the fact that I was more critical in the second study, realizing that the functional return in patients with lumbar lesions, in most instances, was compatible with the very level of the injury. Table 5 shows that in the second study not a single patient with a lumbar lesion walked without the use of aids, whereas 2 patients with cervical lesions did. These data from the second study are even more emphasized by those of the first study, which showed that patients with cervical lesions (laminectomized as well as nonlaminectomized) were discharged without aids of any kind

TABLE 5.—*Statistics on Ambulatory Patients of Second Study*

Patients	*Vertebral Level*	*Neuro. at Onset*	*Block*	*Bladder Sensation*	*Bladder Control*	*Ambulation*
Laminectomy						
1. R. W.	T9	Comp.	?	Near normal	Near normal	2 C.C. (wheel chair)
2. D. W.	T12	Comp.	Yes	None	None	1 L.L. (wheel chair) 1 S.L. 2 canes
3. W. O.	L1	Comp.	Yes	None	None	1 L.L. (wheel chair) 1 S.L. 2 canes
4. P. P.	L3	Inc.	?	None	None	1 S.L. (wheel chair) 2 C.C.
No laminectomy						
1. R. G.	C	Comp.	No	Normal	Normal	No aids
2. C. P.	C	Comp.	No	Normal	Normal	No aids
3. W. H.	C	Comp.	No	Near normal	Near normal	2 canes (wheel chair)
4. R. H.	C	Comp.	No	Near normal	None	Walker (wheel chair)
5. R. G.	L4-5	Comp.	?	Near normal	None	2 C.C. 2 S.L.

in more instances than were those with lumbar lesions.

Observation of patients who have undergone repeated laminectomies have not been rewarding so far as functional return is concerned. Repeated operations on lesions of the cauda equina, done in order to improve ambulation, can be dangerous; I have observed patients who lost normal sensation and control of the urinary bladder after the second intervention. Although function of the bladder is highly important because the life span of this type of patient is directly proportionate to the status of the urinary tract, assuming that all other systems are essentially normal.[7] Urologic considerations are more fully appreciated when one realizes that fewer than 10 per cent of patients with injuries to the spinal cord have normal or nearly normal vesical sensation or control.

Gross observations of the cord at operation did not provide a reliable criterion with regard to functional prognosis unless the cord had obviously been transected. Many patients with a "normal-appearing cord" did not improve at all, while others with subtotal lesions became somewhat better. The surgeon must be cautious, therefore, in discussing the prognosis for functional recovery.

Tract conducting tactile sensibility recovered most frequently. Recovery of pain and temperature sensation came next. Poorest was the return of motor function.

Although I follow the aforedescribed indication for laminectomy, I realize that no two cases of injury to the spinal are alike, and this is considered before a final decision is made for or against laminectomy. The age of the patient, the lapse of time since injury, the cause of injury, the roentgen, manometric and psychic factors and any coexistent complications are thoroughly studied.

ZUSAMMENFASSUNG

Der Verfasser berichtet über eine statistische Untersuchung des Wertes der Laminektomie bei der Behandlung von Kr-

ken mit Rückenmarksverletzungen. Er weist auf die hier bestehenden Meinungsverschiedenheiten hin und schlägt als Grundlage zur Bestimmung, ob eine Laminektomie angezeigt ist oder nicht, das Bestehen oder Fehlen einer manometrisch nachweisbaren Blockierung des Wirbelkanals vor.

Andere Ergebnisse dieser Untersuchung werden in tabellarischer Form mit allgemeinen Anmerkungen des Verfassers dargestellt.

RÉSUMÉ

L'auteur présente une étude statistique sur la valeur de la laminectomie dans les lésions de la moëlle épinière. Il rappelle les divergences d'opinion dont elle fait l'objet, et propose une base de détermination pour son indication, constituée par la présence ou l'absence de blocage spinal manométrique.

Certaines caractéristiques ressortant de cette étude sont également présentées et commentées (statistiques sous forme de tableaux).

RESUMEN

El autor presenta un estudio estadístico del tratamiento de traumatismos de la médula espinal por la laminectomía. Señala que hay divergencias sobre este tratamiento, y toma como base, para indicar o no la laminectomía, la presencia o ausencia de bloqueo manométrico espinal.

SUMARIO

Apresenta uma estatistica do valor da laminectomia nas lesões da medula. Estabelece as diferenças de opinião e fornece as bases para determinar quando a laminectomia é ou não indicada, principamente em presença ou ausência de bloqueio manometrico.

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Editors' Note: Owing to an unfortunate printers' error, this article, *Laminectomy in Patients with Injuries of the Spinal Cord,* by Dr. Estin Comarr, F.A.C.S., F.I.C.S., D.A.B., appeared in the March issue of the Journal without the author's name on the title page and has therefore been reprinted in full in this issue. Our sincerest apologies are offered to Dr. Comarr and to the readers of the Journal.

Some Myofascial Impingements Against the Iliohypogastric and Ilioinguinal Nerve in Women

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Observations on 27 female cadavers revealed that in the majority of instances the iliohypogastric and ilioinguinal nerves united into a single trunk. In more than half the number of sides observed, these nerves were impinged against by muscle, or by connective tissue formations or by the nerves piercing the psoas major muscle.

Most girls with severe dysmenorrhea complained of pain in the region of the abdominal wall corresponding to the cutaneous distribution of the iliohypogastric and or ilioinguinal nerves. Whether myo fascial impingements irritate these nerves concomitantly with dysmenorrhea is uncertain.

AFTER examining patients during the menstrual period, Billig[1] stated that the pain of dysmenorrhea was localized in the region of the cutaneous distribution of the twelfth thoracic and first lumbar nerves (iliohypogastric and ilioinguinal nerves). Earlier, Theobald[2] had reported that pain induced in the cervix of the uterus was referred to the area of skin supplied by branches of the 1st lumbar nerve, and demonstrated relief from dysmenorrheal pain[3] by infiltrating the iliohypogastric and ilioinguinal nerves with a 2 per cent solution of procaine hydrochloride. In a preliminary report of a ten-year survey that included several thousand girls in the Philadelphia Public High Schools, one of us (L. J. G.[4]) asserted that the majority of those with severe dysmenorrhea complained of pain in the lower part of the abdomen or in the mid-low center of the abdominal wall.

Scanty and incomplete information exists with regard to the variational morphologic aspect of the myofascial relations of the iliohypogastric and ilioinguinal nerves traversing the paravertebral region. It seemed reasonable, therefore, to look for structural differences and to see whether or not any possibility exists for impingement upon these nerves or irritation of them, by the muscular and or fascial formations with which they are intimately related.

Material and Method.—Twenty-seven female cadavers, histories for which were unavailable, in the students' anatomy laboratory were used for the observations

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TABLE 1.—*Peripheral Appearance of Nerves*

Iliohypogastric Nerve Ilioinguinal Nerve	Right Side	Left Side
Separate	5	3
Combined into single trunk	21	23
Joined with 12th thoracic (subcostal) nerve to form single trunk	1	1

After the peritoneum had been carefully reflected the psoas major and quadratus lumborum muscles and the upper branches of the lumbar plexus were exposed. The iliohypogastric and ilioinguinal nerves (or their combined trunk) were identified and explored spinalward, with considerable caution, so as to note nerve-fascia-muscle relations as the nerves emerged from between the large paravertebral muscles of this region or after they passed through the body of a muscle. When necessary, the peritoneum was stripped away from a portion of the abdominal surface of the diaphragm for further exposure.

Observation and Results. — Three patterns of the iliohypogastric and ilioinguinal nerves were noted upon their emergence from between or through muscles (Table 1): (a) *They appeared separately,* (b) they joined into a single trunk, (c) both combined with the twelfth thoracic (subcostal) nerve to form a single trunk.

The myofascial relations of the nerves on the right and left sides of the body are summarized in Table 2. Since individual

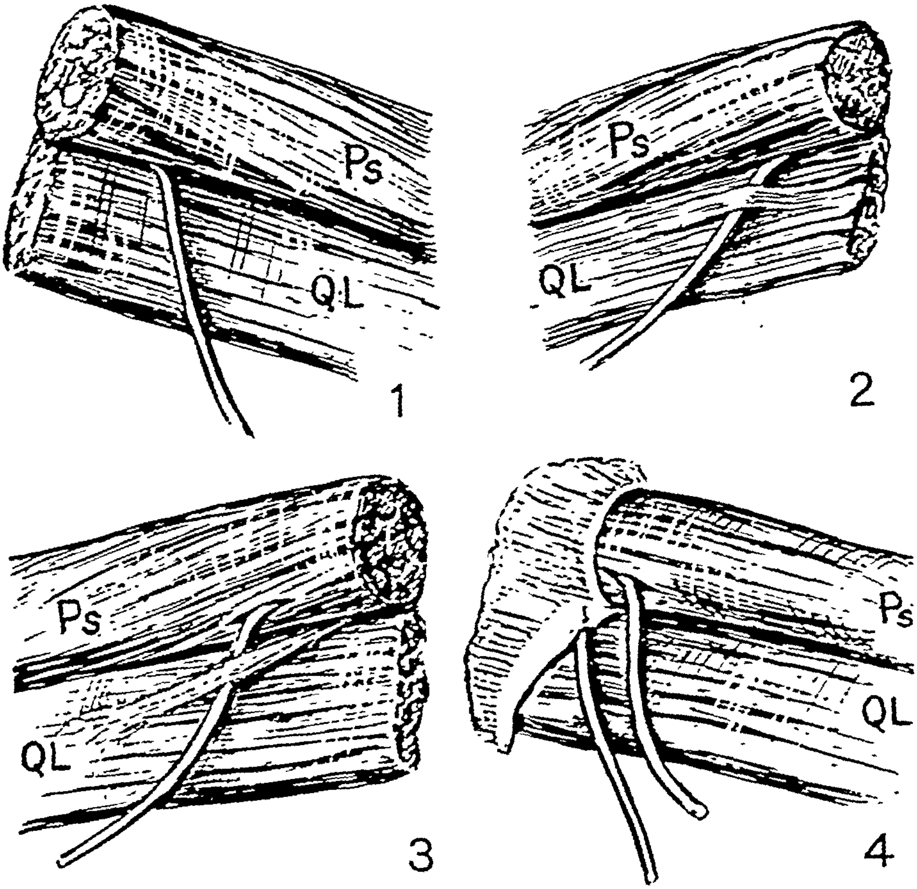
TABLE 2.—*Myofascial Patterns of Impingement against the Iliohypogastric and Ilioinguinal Nerves in Female Cadavers*

Pattern A *Nerve Passes Between Psoas Major and Quadratus Lumborum Muscles; No Impingement*		*Pattern B* *Nerve Impingement by Muscular Band from Quadratus Lumborum Muscle*		*Pattern C* *Nerve Impingement by Muscular Band from Diaphragm*		*Pattern D* *Nerve Pierces Psoas Major Muscle*		*Pattern E* *Nerve Impingement by Band of Connective Tissue; Otherwise Same as Pattern D*		*Pattern F* *Nerve Impingement by Band of Connective Tissue; Otherwise Same as Pattern A*	
R	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*
/////	/////	///*	///	//	/	/ a′	/	/ c′	//	////**	////
/////	/////		/ e′			/ g	/d′			/ b′	/ f′
//	///					/ h				/ g′	/ i′
/ a	/ d									/ h′	
/ b	/ e									/ i	
/ c	/ f										

The following symbols are used in Table 2: (a) iliohypogastric nerve only, originating from second lumbar level; ilioinguinal nerve (a′) from second lumbar level on right side showed Pattern D; (b) ilioinguinal nerve only; iliohypogastric nerve (b′) on right side showed Pattern F; (c) iliohypogastric nerve only; ilioinguinal nerve (c′) on right side showed Pattern E; (d) iliohypogastric nerve only, originating from second lumbar level; ilioinguinal nerve (d′) from second lumbar level on left side showed Pattern D; (e) ilioinguinal nerve only; iliohypogastric nerve (e′) on left side showed Pattern B; (f) ilioinguinal nerve only; iliohypogastric nerve (f′) on left side showed Pattern F; (g) ilioinguinal nerve only; iliohypogastric nerve (g′) on right side showed Pattern F; (h) ilioinguinal nerve only; iliohypogastric nerve (h′) on right side showed Pattern F; (i) subcostal, iliohypogastric and ilioinguinal nerves formed common trunk; similar combination of nerves (i′) on left side showed same pattern.

*Band of connective tissue accompanied muscle impinging against nerve.

**Muscle bundles both from psoas major and from quadratus lumborum muscles attached to connective tissue band impinging against nerve.



Figs. 1, 2, 3 and 4.—*Fig. 1*, sketch showing iliohypogastric and ilioinguinal nerves combined into a single trunk passing unobstructed between psoas major and quadratus lumborum mucles. *Fig. 2*, sketch similar to Figure 1, except that muscular band attaches combined nerves to quadratus lumborum muscle. *Fig. 3*, sketch showing relations similar to those in Figure 2, except that connective tissue band holds combined nerves against muscle. *Fig. 4*, iliohypogastric nerve is held firmly in position by connective tissue expansion from the lateral lumbocostal arch; ilioinguinal nerve pierces psoas major muscle, and it is vulnerable to muscular compression.

histories were unavailable, such a grouping as this has more significance for purposes of comparison than does the tabulation of bilateral variations in separate persons.

Of the different situations observed, that of Pattern A (Fig. 1) includes the largest single group of nerves of any of the categories recorded, although absolutely the number of nerves of all other patterns combined that are related to some type of myofascial impingement exceeds the number of nerves in Pattern A.

Although the nerves in Pattern B coursed similarly to those in Pattern A, a definite muscular strip from the quadratus lumborum muscle lay ventrally across them and binding them down (Fig. 2). In a few instances this impinging strip of muscle came from the diaphragm (Pattern C).

In Pattern D, these nerves or their combined trunk pierced the psoas major muscle. Sometimes, as in Pattern E, a ventrally lying connective tissue band aided, also, in anchoring the nerves (Fig. 3).

Nerves that emerged in a manner similar to those in Pattern A but which were crossed or covered ventrally by a definite bandlike formation of connective tissue (Fig. 4) composed Pattern F. Such nerves were considerably more stabilized, in the sense of being less freely movable than nerves of the other patterns, yet the nerves of the other patterns were apparently more liable to compression because of muscular contraction than were those in Pattern F.

COMMENT

From these observations, the iliohypogastric and ilioinguinal nerves in the female cadaver seem potentially vulnerable to compression by the overlying myofascial formations, perhaps more so in Patterns B, C, D and E, owing to the contractibility of the formations, than in Pattern F.

When these observations are considered in conjunction with the studies of previous investigators (Theobald[2]; Theobald[3]; Billig[1]) it would appear that the iliohypogastric and ilioinguinal nerves play an intimate role in the symptom complex of dysmenorrhea. Whether endocrine changes in electrolyte balance at the time of the menstrual period may be responsible for irritation of these nerves in women with some of these myofasical impingements is obscure. Further studies on persons with available histories may clarify some aspects of this problem, relating morphologic variation to dysmenorrhea.

Authors' Note: Sincere thanks are extended to Dr. H. Menduke, of the Department of Biostatistics of the Jefferson Medical College, for his worthy counsel.

RESUMEN

En 27 autopsias practicadas en mujeres se ha podido constatar que la mayor parte de las veces los nervios iliohipogástrico e ilioinguinal se unen en un tronco común; además en más de la mitad de los casos (contando los 2 lados de cada sujeto) uno de los 2 nervios al menos estaba incluído en una fascia o en masa muscular, o bien atravesaba la masa del psoas.

La mayor parte de las jóvenes que padecen dismenorrea se quejan de dolor en la región de la pared abdominal inervada por el iliohipogástrico o el ilioinguinal, Quizás las aderencias músculo-aponeuréticas descritas irritan a estos nervios coincidiendo con la dismenorrea.

ZUSAMMENFASSUNG

Beobachtungen an 27 weiblichen Leichen haben gezeigt, dass in der Mehrzahl der Fälle der N.iliohypogastricus und der N.ilioinguinalis sich zu einem Strange vereinigen.

In mehr als der Hälfte der untersuchten Präparate wurde festgestellt, dass die beiden Nerven entweder gegen Muskeln oder Bindegewebsgebilde gedrückt waren, oder dass sie den M.psoas major durchbohrten.

Die meisten unter schwerer Dysmenorrhöe leidenden Mädchen klagen über Schmerzen in einer Gegend der Bauchwand, die der Verteilung der Hautäste des N.iliohypogastricus oder des N.ilioinguinalis oder beider Nerven entspricht. Ob bei der Dismenorrhöe eine Reizung dieser Nerven durch Einklemmungen seitens der Muskeln oder Faszien eine Rolle spielt, ist ungewiss.

RIASSUNTO

Studi anatomici su 27 cadaveri di donna hanno dimostrato che nella maggioranza dei casi i nervi ileo-ipogastrico e ileo-inguinale si uniscono in un tronco unico.

In più della metà dei casi osservati i nervi erano compressi contro muscoli o

formazioni connettivali, oppure attraversavano il grande psoas.

In molte ragazze con grave dismenorrea vi è un dolore nella parete addominale che corrisponde alla distribuzione cutanea di questi due nervi. Non è possibile dire se questi siano irritati da compressioni miofasciali.

RÉSUMÉ

L'étude de 27 cadavres féminins a montré que les nerfs iliohypogastriques et ilioinguinaux se réunissent en un seul tronc dans la majorité des cas.

Dans plus de la moitié des côtés examinés, les nerfs soit ilio-hypogastriques soit ilio-inguinaux adhéraient au muscle ou au tissu conjonctif, ou ils pénétraient dans le muscle psoas.

La plupart des jeunes filles que l'auteur a examinées et qui présentaient une dysménorrhée grave, se plaignaient de douleurs au niveau de la paroi abdominale, correspondant à la distribution cutanée des nerfs ilio-hypogastriques et ilio-inguinaux. Les inclusions myofasciales irritent-elles ces nerfs en cas de dysménorrhée? Il n'est pas possible pour l'instant de se prononcer à ce sujet.

SUMÁRIO

Observações em 27 cadáveres do sexo femenino revelaram que na maioria dos casos os nervos ileohipogastrico e ileoinguinal apresentavam-se unidos, formando um simples tronco.

Em mais da metade dos casos observados, os nervos ileohipogastrico e ileoinguinal estavam impingidos contra os musculos por formações de tecido conjuntivo ou penetravam no musculo psoas.

A maioria das moças com dismenorrea severa queixam-se de dôr na região da parede abdominal correspondente a distribuição cutânea do nervo ileohipogastrico ou ileoinguinal.

É incerto se tais impingimentos mioaponeuróticos irrit am os nervos con comitantemente com a dismenorrea.

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The failure of the reactionaries in Vienna to accept the Semmelweis doctrine seems to have stemmed largely from the antagonism of Klein. In other parts of the world, the trouble was largely one of misunderstanding. Semmelweis himself had discovered the cause through cadaveric infection and had at first believed that this was the only source by which it reached the mother. Later he was forced to modify his theory and it was stated in Hebra's first paper that puerperal fever was sometimes an "infection by means of putrid exudation or discharge from a living organism."

—Slaughter

Vulval and Extraperitoneal Hemorrhage Complicating Obstetrical and Gynecological Surgery

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THE effusion of blood into the cellular structures of the vulva, vaginal walls and extraperitoneal space after delivery or a gynecologic procedure is a dangerous complication.

Both Williams[1] and DeLee[2] stated that Jacob Reuff in 1554 first recorded and described the vulval and perineal variety of hematoma. The gynecologic literature fails to reveal any study of this complication; most authors identify the entity as accidental to or consequent upon delivery.

The relation of hematoma to obstetrics has been studied extensively. In 1940 Hugh Hamilton[3] reviewed 12 cases under his own supervision, in addition to 127 which he collected and studied from the literature. He separated hematomas into two varieties: immediate and delayed. The former occurs soon after labor and is considered due to the trauma of delivery. This trauma is induced by spontaneous disruption of the tissues or by operative manipulation. The delayed type is said to be due to necrosis of blood vessels and may occur as late as twenty-one days post partum.[2] Illustrative of this is the following case.

CASE REPORT

Mrs. L. R., aged 33, was admitted to the hospital complaining of fever, chills and pain in the abdomen and rectum for three days. The previous obstetric history showed that she had had two spontaneous abortions after eight weeks of gestation in September and December, 1950. She had become pregnant again in July 1951, but three weeks prior to term it was apparent that there was a dead fetus *in utero*. On April 21, approximately two weeks before term, she went into labor and was delivered spontaneously of an abnormal, macerated fetus. The postpartum course was uneventful. Six weeks after delivery she began to complain of perineal and abdominal pain and inability to void urine. Accordingly, she was given antibiotics and admitted to the hospital. Examination revealed the abdomen to be extremely tender. A mass could be felt suprapubically to about 2 fingerbreaths above the symphysis. Pelvic examination revealed a large fluctuating mass in the left vaginal wall. This mass encroached upon the rectum and extended above the pubis. The uterus was small and well involuted. There was no palpable abnormality in either adnexal region.

The temperature was elevated to 101 F. The blood contained 15,000 leukocytes per cubic millimeter, with 80 per cent polymorphonuclears. The erythrocyte count and the hemoglobin level were within normal limits. Examination of the urine gave negative results. A diagnosis of infected paravaginal hematoma was made, and with the patient under general anesthesia this mass was evacuated. About 200 cc. of dark, foul-smelling fluid was drained through a vaginal incision; the area was drained. The patient made an uneventful recovery and was discharged in five days.

Further classification of this lesion must be made according to the direction of the spread of blood in relation to the pelvic fascia. If the hemorrhage occurred ex-

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ternally to the pelvic fascia, the infiltration dissected downward. On the other hand, if the bleeding appeared above the level of the fascia, the hemorrhage dissected into the extraperitoneal spaces.

Of the patients studied by Hamilton, 84 were reported to be primigravidae and 55 multigravidae. Hematomas appeared 82 times after spontaneous delivery and 57 times after operative delivery. This complication developed immediately in 121 patients; in the remaining 18 it was delayed. Only 1 death was recorded in Hamilton's own group, but 27 occurred in the collected series.

In 1952 McNally and Erlich[4] collected and reviewed 52 cases of hemotoma of the birth canal, the records of which were taken from 8 Baltimore hospitals in a study covering three to fifteen years. Of the patients in this group, 34 were primigravidae and 18 multigravidae. Spontaneous delivery occurred 9 times; 42 patients were delivered by forceps, and in 1 case there was a breech extraction.

The incidence of labial, vaginal and extraperitoneal hemorrhage in the postpartum period is low. It has been reported as varying from 1 in 1,600[5] to 1 in 7,500 (DeLee[2]). In presenting a study of lacerations of the birth canal, the authors expressed agreement with Savage[6] that "the incidence of vaginal hematomata cannot be estimated accurately for many go unnoticed and are more frequent than generally recognized."

In a ten-year study (1947-1957) of obstetric patients at the Hospital for the Women of Maryland, 62 hematomas of the birth canal occurred after approximately 20,000 deliveries. In a similar study of gynecologic patients over the same period, there were only 8 such complications.

In an eight-year study (1950-1957) of obstetric patients at the Sinai Hospital of Baltimore, 59 hematomas of the birth canal were observed in approximately 21,000 deliveries. A study of the gynecologic patients over the same period failed to reveal any such complication. The mortality rate was 0 (see table).

In 20,000 deliveries at the Hospital for the Women of Maryland, in the past ten years, postpartum hematomas were observed 62 times. In the gynecologic service only 8 patients had this complication. In 21,000 deliveries at the Sinai Hospital in the past seven years, postpartum hematomas were present 59 times. Statistics on this complication from the gynecologic service were not available.

According to the literature, primigravidae are affected more often than are multigravidae. In the authors' series the reverse was true. The complication was more often associated with operative than with spontaneous delivery.

Prophylactic treatment consists of thorough inspection of the operative site and alertness as to the possibility of the complication. Early active treatment is essential, with attention to the prevention of shock.

In recent years the mortality rate has been lowered to zero.

The mortality rate has been estimated as ranging from 12 to 40 per cent. This, however, does not concur with the reviewed literature or with the results of our study.

Williams[11] reported a mortality rate of 56 per cent; DeLee,[2] 12 to 40 per cent; Hamilton[3] only 8.3 per cent; and McNally and Erlich[4] 0. In our series also, no death occurred.

The amount of blood lost may range from slight infiltration to massive [illegible] orrhage, producing shock and death if it is not recognized and properly treated. Hemorrhage is always a serious complication, but the concealed variety is of even graver import, since it is often missed until the patient is *in extremis*.

The subject of retroperitoneal hemorrhage associated with pregnancy prior to delivery has been reported. This complication in the antepartum period is extremely rare but has been observed by Zummo, Williams and Uznanski[7] and by Callagher.[1b] It is mentioned here only to point out the conclusion that similar causative factors could exist in antepartum and postpartum patients as well as in patients subjected to gynecologic operations.

As a result of having encountered several seriously complicating postpartum and postoperative hematomas, a study was made of patients delivered and operated upon at the Hospital for the Women of Maryland, covering a ten-year period, and at the Sinai Hospital of Baltimore, over a seven-year period.

A complete review of the gynecologic patients of the Women's Hospital revealed that only 8 had complicating postoperative hematomas, which followed vaginal plastic procedures in 6 cases and abdominal procedures in 22. None proved fatal, and all were handled by evacuation of the clot, packing and blood transfusion. In the Sinai group, data on the gynecologic postoperative hematomas were not available.

In the obstetric group at the Women's Hospital, hematomas of one degree or another developed in 62 patients. Of these 20 were primigravidae and 42 multigravidae. Delivery was operative in 46 cases and spontaneous in 16. There were no deaths.

Of the obstetric patients studied at the Sinai Hospital, 22 cases of hematomas occurred in 22 primigravidae and 37 multigravidae. Operative delivery was necessary in 54 cases; while spontaneous delivery occurred in 5. There were no deaths.

It is necessary to separate into two parts the discussion of hematomas and extraperitoneal collection of blood in obstetric and gynecologic patients. The first is the easily recognizable and simply treated vulval and perineal hematoma. The second is the more often obscure and difficult to manage, i.e., hemorrhage into the paravaginal, anterolateral and retroperitoneal spaces surrounding the vagina, uterus, tubes and ovaries.

It is readily apparent that hematomas of the vulva, vagina and perineum are more frequently encountered in obstetric than in gynecologic practice. The reason is obvious, since more patients have babies than undergo gynecologic operations. There is always more vascularity of the pelvic organs and surrounding tissues in pregnancy than would be present in the nonpregnant state. Whatever may be the causative factor in either group, gentleness in the handling of tissues, meticulous attention to hemostasis and thorough inspection of the operative site are all cardinal steps in its prevention.

In the further discussion of hematomas of the gynecologic variety, Strauss, in Davis' *Gynecology and Obstetrics* listed several causes of hemorrhage that may produce hematomas: (1) torsion of a pedunculated mass; (2) subperitoneal rupture of a broad ligament varix; (3) partial or complete rupture of a pregnant uterus; (4) proliferation of an ovarian neoplasm with extension into the broad ligament; (5) hemorrhage into an ovarian or para-ovarian cyst or rupture of the same,[8] and (6) perforation of the uterus.

The majority of hematomas, once developed, involve superficial tissue only. These may go on, however, to develop into the more serious variety. They are quickly distinguished by a purplish discoloration;

Obstetrical Hematomas in Relation to Parity, Delivery and Mortality

Source	*Number of Cases*	*Primigravidae*	*Multigravidae*	*Operative Delivery*	*Spontaneous Delivery*	*Mortality, %*
Hamilton, 1940	139	84	55	82	57	8.3
McNally and Erlich, 1952	52	34	18	43	9	0
Women's Hospital Series, 1957	62	20	42	46	16	0
Sinai Hospital Series, 1957	59	22	37	54	5	0

they are associated with severe pain and tenderness. In fact, the severity of the pain is often the clue that should lead to the discovery of the lesion.

When there is bleeding above the pelvic fascia that forms at a higher level, the collection may become enormous. It may even occlude the rectum or the vagina.

Occasionally effusion of blood may start at the base of the bladder and extend upward into the extraperitoneal spaces. This is no longer a simple hematoma but a severe, uncontrollable loss of blood, seriously endangering the patient's life.

This type of hemorrhage complicating gynecologic and obstetric procedures is comparatively rare. Torpin[9] reported the cases of 28 patients who had this type of bleeding associated with pregnancy and delivery. Although in the majority of his patients rupture of the epigastric arteries occurred during pregnancy, in 10 it occurred after delivery and in 2 after abortion. Torpin observed that this complication was more frequent in multigravidae than in primigravidae. There was also some correlation to trauma, such as a severe cough or an external blow. The maternal mortality rate was 15 per cent.

Two illustrative cases are here reported. In the first, rupture of the epigastric vessels followed delivery. In the second, severe retroperitoneal bleeding followed parametrial fixation for prolapse of the uterus.

CASE 1.—Mrs. M. H., aged [illegible], para 2, was admitted to the hospital at term, with spontaneous rupture of the membranes and apparently in labor. A frank breech extraction was done. After approximately two hours of excellent labor there was full dilatation and the patient was ready for delivery. Under gas oxygen anesthesia she was delivered of a live girl weighing 6 pounds 8 ounces (2,948 Gm.), over a left medio lateral episiotomy. The Guillemeau-Mauriceau-Smellie-Veit maneuver was used for the aftercoming head. A moderate amount of suprafundic pressure was exerted during the delivery. About five hours later the patient apparently was in shock. She was cold and clammy, sweating profusely, and the blood pressure in millimeters of mercury was 70 systolic and 50 diastolic. Examination at this time revealed a large suprapubic mass that was extremely tender to palpation. Upon catheterization, a small amount of concentrated urine was obtained, after which two distinct masses could be palpated and a large suprapubic mass extending almost to the umbilicus, and another mass on the left, which gave a definite impression of being the uterus. A diagnosis of rupture of the uterus was made. The patient was given several transfusions, and when her condition warranted it an operation was performed. When the rectus sheath was opened, a tremendous amount of blood was observed in the anterior and paravesical spaces, extending down to the pelvic floor. There was a general ooze, but no definite bleeding point could be located. The peritoneum was opened sufficiently to determine the fact that the uterus was not ruptured. Despite continuous transfusion, the condition of the patient was poor. The extraperitoneal spaces were packed with gelfoam and gauze and then drained. With antibiotic therapy and supportive treatment, the patient made a steady recovery; she was discharged as well in ten days.

CASE 2.—Mrs. L. P., para 3, was admitted to the hospital with a diagnosis of procidentia. There was marked protrusion from the vagina, of five years' duration. She [illegible] ditional pregnancies and the protrusion caused her great discomfort, the parametrial fixation type of operation was chosen. This was performed with ease, and no unusual blood loss or other complication was encountered at the time of operation. On the third postoperative day a routine red blood cell count revealed a hematocrit reading of 34, with 2,240,000 red blood cells per cubic millimeter. The patient was therefore given 500 cc. of blood. On the fifth postoperative day a moderate amount of dark blood began to ooze from the vagina. On the seventh postoperative day there was a sudden profuse hemorrhage; the patient went into shock. A transfusion was given, and she was moved to the operating room. Several small bleeding points were detected on the cut vaginal edges and the cervix. A secondary repair was done; the vagina was packed, and the patient was returned to her room. Several days later the bleeding recurred, and she was brought to the operating room for another repair. At this time an exploratory laparotomy was performed with the intent of removing the uterus, but it was apparent that the bleeding was in and from the left parametrial space. A large pack was inserted into this space, which controlled the bleeding. From then on the patient's recovery was uneventful. She was finally discharged as well on the twenty-fourth day after the first operative procedure. Repeated examinations revealed that she no longer had prolapse, cystocele or rectocele. She has had no further pregnancies up to the time of this report.

COMMENT

Vulval, paravaginal and extraperitoneal effusion of blood must be considered from the surgical as well as from the obstetric viewpoint. It is apparent that the surgical variety of this complication cannot be as frequent as the obstetric type. Over a period of ten years in an active gynecologic service, only 8 patients had to have postoperative hematomas. In obstetric practice, hematoma of the birth canal appears much more frequently, as is revealed by the observation of 62 such cases in 20,000 deliveries over a similar length of time; and 59 in 21,000 deliveries over a seven-year period.

In reviewing the literature it becomes obvious that a great deal has been accomplished in lowering the mortality rate. From rates previously as high as 40 to 56 per cent, the rate has been lowered to none. This decrease speaks well for the operating surgeons involved. It is due, probably, to close observation of the patient; the search for laceration of the vulva, vagina and perineum, and the active treatment of the latter once it is discovered. A more thorough search for blood dyscrasia and the employment of early and frequent transfusions have also been helpful.

Stress is placed upon the early recognition and treatment of the delayed type of hematoma. Whenever an operation or delivery occurs, constant vigilance is necessary to detect hemorrhage of the concealed type.

Once a lesion has been found, it is imperative to institute active treatment. Intravenous infusion of dextrose should be started, so that a vein may be open in case blood is necessary. Visible collections of blood should be observed closely. If progession of symptoms is noticed, immediate evacuation, with packing of the cavity of the hematoma, should be carried out. It is seldom that bleeding vessels are seen; delay in hemostasis, therefore, is not warranted by attempts to locate such vessels. Suture ligation in the cavity, with tight, firm packing and contrapacking, are indicated. Often palliative treatment is deleterious to the patient whose condition may rapidly deteriorate owing to the loss of blood or the loss of clot mechanism associated with a large hemorrhage.

Although hematomas develop frequently after spontaneous delivery, they appear more often after the operative type. In the previous series studied from the literature they appeared more often in primigravidae; in our series the reverse was true. The discrepancy is unaccountable, yet it will be noted that operative delivery was more frequent in the patients studied by us, and this may have some significance.

We wish to emphasize the importance of routine inspection of the involved structures after delivery or operation. An essential part of the early diagnosis of hematoma is alertness to its possibility. Once the diagnosis has been established, it is important to begin treatment.

SUMARIO E CONCLUSOES

Faz revisão dos hematomas pós-operatorios e do pós-parto, alem de analisar as hemorragias extraperitoneais.

Hematomas foram observados 62 vezes em 20.000 partos no Hospital de Maryland em 10 anos. Somente 8 mulhesres tiveram complicações pós-operatorias. Em 21.000 partos no Sinai Hospital em 7 anos houve 59 hematomas, não havendo dados estatisticos no serviço ginecologico desse hospital. A literatura registra que as primiparassão mais acometidas que as multiparas. Na serie do A. os achados foram inversos, tendo essa complicação sido mais frequente nos partos operatorios que nos naturais. A mortalidade recentemente caiu a zero. A prevenção consiste na exame cuidadoso do campo operatorio e a vigilancia. Preconisa o tratamento pronto com atenção á prevenção do choque.

RÉSUMÉ ET CONCLUSIONS

Etude sur les hématomes et les hémorragies extrapéritonéales post-opératoires et post-partum.

Sur 20.000 accouchements à l'Hôpital pour Femmes de Maryland il y a eu, au cours des 10 dernières années, 62 cas d'hématomes post-partum (8 cas seulement dans le service de gynécologie) et 59 cas sur 21.000 au Sinai Hospital, au cours des 7 dernières années. Selon la littérature cette complication est plus fréquente chez les primipares, mais l'auteur a constaté le contraire dans sa série de cas personnels.

Depuis quelques années la mortalité est nulle.

Le traitement prophylactique consiste en une inspection complète du territoire opératoire avec, en cas de complications, un traitement précoce actif associé aux mesures d'usage en vue d'éviter le choc.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Das Thema postoperativer und nachgeburtlicher Hämatome und extraperitonealer Blutungen wird einer Nachprüfung unterzogen.

Im Hospital for the Women of Maryland wurden bei 20 000 Entbindungen innerhalb der letzten zehn Jahre nachgeburtliche Hämatome 62 mal beobachtet. Auf der gynäkologischen Abteilung trat diese postoperative Komplikation nur bei acht Patientinnen auf. Im Sinai Hospital kam bei 21 000 Entbindungen in den letzten sieben Jahren 59 Nachgeburtshämatome vor. Von der gynakologischen Abteilung waren Statistiken über diese Komplikation nicht erhältlich. Nach den Berichten in der Literatur werden Erstgebärende öfters befallen als Mehrgebärende. In der Serie des Verfassers war das Umgekehrte der Fall. Die Komplikation trat häufiger bei operativen als bei spontanen Entbindungen auf.

In den letzten Jahren ist die Sterblichkeitsziffer auf Null herabgesunken.

Die prophylaktische Behandlung besteht insorgfältiger Besichtigung des Operationsgebietes und in der Wachsamkeit, mit der an diese mögliche Komplikation gedacht wird. Frühzeitige aktive Behandlung unter Beachtung der Vorbeugung eines Schocks ist von wesentlicher Bedeutung.

RESUMEN Y CONCLUSIONES

Se revisa el tema de las hemorragias extraperitoneales y los hematomas en el

postoperatorio o después del parto. En el hospital Ginecólogo de Meryland ha habido 62 casos con hematomas puerperales entre los 20.000 partos atendidos en 10 años; solo 8 en el postoperatorio de enfermas ginecológicas.

Entre los 21.000 partos asistidos en estos últimos 7 años en el Hospital Sinaí se han visto 59 casos de hematoma; no se señalan los casos resultados del departamento de ginecología.

La literatura afirma que las primigrávidas están más predispuestas a esto que las multigrávidas; sin embargo nuestra experiencia señala lo contrario. Por otro lado se presenta con más frecuencia en las enfermas operadas.

En estos últimos años el índice de mortalidad ha bajado a O.

Debe hacerse una buena profiláxis vigilando bien el campo operatorio si ha habido intervención y estudiando bien a la enferma temiendo complicaciones. El tratamiento ha de ser rápido, para prevenir el shock.

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The Middle Ages, an era of bronze and iron which emerged enveloped in a historical cloud of dust, did not represent a complete retrogression in medical knowledge. True, the stars of astronomy became the flickering lights of astrologic symbolism, and the chemist's test tube was transmuted into the bubbling crucible of the alchemist searching for the philosopher's stone. But the cathedrals became temples of study where the essences of classical knowledge were translated and poured into occidental molds, and the Arabs advanced pharmacology. although they suppressed the knife in favor of cautery.

—*Marti-Ibañez*

The Management of Puerperal Constipation With a Senna Preparation[†]

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Three random groups of 100 puerperae each were compared for the anticonstipation effectiveness of mineral oil milk of magnesia in one group, with a senna preparation in another and no cathartics in a third. The senna preparation eliminated the need for the third postpartum day enema in 84 per cent of the cases, as opposed to 13 and 16 per cent for the other groups.

The effectiveness of the product, with only limited undesirable side effects, makes it useful in the reduction of nursing care of the postpartum patient.

THE normal woman post partum rarely has a spontaneous stool in the first few days of the puerperium. The causes of this constipation are usually the following:[1] (1) the bowel has been emptied by cathartics and/or enema before labor or at onset of labor; (2) food and fluid intake are minimal during labor, which may last from twelve to eighteen hours; (3) there is normally a notable diuresis post partum that results in some dehydration of the intestinal contents; (4) the abdominal and perineal muscles, because of the distention of late pregnancy and labor, are ineffective expulsive agents; (5) postepisiotomy perineal discomfort and pain make the forcible evacuation of inspissated feces difficult, and (6) the normal tympany present in the puerperium, which may be related to intestinal paresis following the excessive swallowing of air during labor and delivery, contributes to the constipation.

The ubiquitousness of this postpartum complaint has become an economic and administrative problem in the obstetric departments of most hospitals, since the shortage of nursing personnel makes it undesirable to employ enemas for this type of constipation. The saline or soapsuds enema, used safely and effectively for many years on the second or third day post partum for the relief of constipation, has the disadvantage of requiring fifteen to twenty-five minutes of the nurse's time for each patient.

Cathartics, which are drugs to promote defecation, are present in needlessly large numbers and may well outnumber any other class of pharmaceutical preparation used in medicine. This is in no way an index of their usefulness, but it does represent the remarkable concern evidenced by most people with regard to bowel evacuation. Cathartics act by one of three fundamental mechanisms and may be classified as follows: (1) the [illegible] cathartics, which [illegible]

[illegible]

by nerve stimulation; (2) the bulk cathartics, which increase the contents of the intestinal tract and are made up of hydrophilic colloids, indigestible fibers or inorganic salts that retain water in the large bowel owing to the osmotic pressure they exert, and (3) the emollient cathartics, which lubricate the intestinal tract and in this manner facilitate the passage of feces.

Method and Experiment.—The search of a substitute for the postpartum enema led to the evaluation of a senna preparation[3] for comparative purposes with milk of magnesia and mineral oil, and no cathartics at all.

Senna is obtained from the dried leaves and pods of *cassia senna (cassia acutifolia)*. These contain glucosidal compounds which are themselves inactive. In the alkaline small intestine, however, they are hydrolyzed or oxidized by bacteria yielding oxymethyl-anthraquinones, which produce the cathartic action. The most common of these substances are emodin and chrysophanic acid. The special characteristics of various drugs in this group are probably due to differences in the isomers of these materials and in the stability of their glucosidal combination or to the presence of other associated substances, such as tannin and resins. Emodin cathartics include cascara sagrada, rhubarb and aloe as well as senna. They are also known as anthracene cathartics.

The patients in this study were 300 normal non-nursing women without obstetric complications and between 38 and 42 weeks of gestation, two-thirds of whom were clinic patients and one-third private patients. All were delivered through the pelvis, and none had unusual laceration or injury. The deliveries were all either spontaneous or low forceps deliveries, and episiotomy and repair were done in all of them. The distribution of parity in the two groups is demonstrated in Table 1. It reveals a statistical homogeneity that is surprisingly good for such a short series of subjects. The subjects were placed in any one of the three study groups, no one factor determining the category except for the numerical order of admission.

The mineral oil and milk of magnesia were used together in 15 cc. doses of each, administered by mouth at bedtime each night from the first night after the twelfth postpartum hour. The senna granules were administered in like manner at bedtime in 4 gm. doses. If dejection had not occurred by the third day after delivery, a soapsuds enema was administered in most cases to all three groups.

Results.—A total of 300 puerperal women were separated by numerical choice into the three equal groups for the purpose of reducing, by comparison, the nurse's time expended in the administration of enemas. The senna preparation used resulted in spontaneous dejections in 84 per cent of the women by the third day after delivery. The control group without anticonstipation medication and the group given milk of magnesia and mineral oil had spontaneous dejections on the third day after parturition in 13 to 16 per cent of cases, respectively. There were no significant toxic side effects in any of the groups studied.

In the dose levels used here, loose stools and/or griping pains in the large bowel occurred in 3 per cent of the group given mineral oil and milk of magnesia and in 8 per cent of the group given senna. A few patients who were not included in the study but were given 8 Gm. doses of the senna preparation had an appreciably higher incidence of loose stools and griping pains. Toxic manifestations were limited to these two complaints and in no case proved to be of serious import.

Since none of the patients followed in this study nursed their infants, no comment can be offered on the transmission of senna products through lactation. In no instances was a notable change in the color of the urine induced by the excreted chrysophanic acid.

The pronounced reduction of the need for enemas through the use of the senna preparation is apparent from Table 2. It is clear from this study that mineral oil and milk of magnesia, used together in 15 cc. doses of each, offer no clear advantage whatsoever over the omission of anticonstipation medication, as far as reduction in the need for the enema is concerned.

COMMENT

The emodin cathartics act only on the large intestine, and the motor activity of the small bowel is probably uninfluenced. There is, however, a report that emodin directly perfused in the small intestine does cause an increased motility of the intestine.[4] This does not appear to be present with the ordinary doses of senna. It has been suggested[6] that the pharmacologic activity of senna extracts specifically stimulate Auerbach's plexus in the large bowel and that this causes prompt passage of fecal contents. The time required for the drugs to traverse the small intestine and the necessity for a bacterial liberation of the active principle delay the cathartic action up to six hours and occasionally twenty-four hours after administration. The emodin drugs are partly absorbed from the upper part of the intestinal tract and are excreted in body fluids. During lactation they may appear in the milk in sufficient amount to affect a nursing infant. Certain constituents of crude drugs may be excreted into the urine, coloring it. After administration of senna, for instance, chrysophanic acid is excreted by the kidneys. This compound colors acid urine yellow-brown and alkaline urine red-violet. Some emodin cathartics, especially cascara, taken over extended periods, result in melanotic pigmentation of the rectal mucosa. This has not thus far been reported in connection with the senna preparation used in this study.[5]

TABLE 1.—*Parity of Puerperae in Study of Senna Preparation and Postpartum Constipation*

Patient Group	*Number of Pregnancy* 1st	2d	3d	4th	5th	6th	7th
No cathartics	40	30	12	9	5	3	1
Milk of Magnesia and Mineral Oil	46	17	19	4	8	3	3
Senna extract	42	24	16	10	6	2	

TABLE 2.—*Comparison of Results in Puerperal Constipation from Milk of Magnesia/Mineral Oil and Senna Preparation*

Bowel Evacuation and Postpartum Day	*No Cathartics*	*Milk of Magnesia/ Mineral Oil*	*Senna Preparation*
	No./%	*No./%*	*No./%*
3d day without requiring enema	13	16	84
3d day with enema required	83	77	14
4th day with enema required	4	7	2

Senna was used as a cathartic in early Arabic medicine. This drug is more active than cascara sagrada and occasionally produces bowel evacuation in less than six hours after administration. It may cause considerable griping, and it has been suggested that this results from the presence of the resins in the preparation. This was a minor factor in the study here reported and certainly caused the patients less displeasure than did the administration of a soapsuds enema. The flavor of the commercial senna preparation used was entirely acceptable and pleasing to these 100 women. The effectiveness of the senna preparation in reducing the need for enemas during the puerperium is clearly apparent from this study.

ZUSAMMENFASSUNG

Drei Gruppen von je 100 zufällig zusammengestellten Wöchnerinnen wurden,

hinsichtlich der Verstopfung behebenden Wirksamkeit verschiedener Mittel verglichen. Die eine Gruppe erhielt eine Kombination von Mineralöl und Magnesiamilch, eine andere ein Sennapräparat und die dritte andere Abführmittel. In der mit dem Sennapräparat behandelten Gruppe liess sich der Einlauf am dritten Tage nach der Entbindung in 84 Prozent der Fälle ausschalten, was bei den anderen beiden Gruppen nur in 13 und 16 Prozent der Fälle gelang.

Die Wirksamkeit des Sennapräparats, das nur eine sehr begrenzte Zahl von unerwünschten Nebenerscheinungen mit sich brachte, lässt sich zur Einsparung des Krankenpflegepersonals auf der geburtshilflichen Abteilung ausnutzen.

RÉSUMÉ

Trois groupes pris au hasard, comprenant chacun 100 cas de fièvre puerpérale ont servi de base pour l'etude des propriétés anticonstipantes des produits suivants: (1) huile minérale-lait de magnésie; (2) préparation de séné; (3) cathartiques. La préparation de séné a permis de supprimer le lavement du troisiéme jour après l'accouchement dans 84% des cas (13 à 16% pour les autres groupes).

L'efficacité du séné (troubles secondaires minimes)est précieuse du fait qu'elle réduit les soins post-partum.

RIASSUNTO

Vennero scelti a caso tre gruppi di 100 puerpere ciascuno e trattati il primo con olio minerale e late di magnesia, il secondo con senna e il terzo con catartici, onde studiare l'efficacit rispettiva di questi farmaci. La senna riesce a eliminare la necessità del clistere nell'84% dei casi, mentre ciò avviene rispettivamente solo nel 16 e nel 18% deli altri due gruppi.

Tale prodotto, pertanto, oltre ad avere solo scarsi effetti collaterali, si dimostra molto utile nell'assistenza post-partum.

RESUMEN

Se hace un estudio comparativo de 3 grupos de 100 puerperas cada uno, para observar el valor purgante de la magnesia, el senna y los catárticos.

El preparado de senna suprime la necesidad de administrar un enema laxante al tercer día del puerperio en el 84% de los casos, mientras que con los purgantes sólo se obtiene un 13 y un 16% de éxitos.

La eficacia del producto, cuyos efectos secundarios son mínimos, hace que sea útil para reducir las molestias del puerperio.

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Look at the cases not from the standpoint of textbooks and monographs, but as so many stepping-stones in the progress of your individual development in the art.

—*Osler*

Ophthalmologic Surgery

Binocular Simultaneous Cataract Extraction

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A series of cases of bilateral simultaneous cataract extraction is presented. This operation was performed on all types of patients, regardless of physical condition or complications.

Diabetics and hypertensive patients—patients with cardiac insufficiency, psychotic patients, deformed arthritic patients, patients over 90 years of age and 2 under 50 (one 32 years old and one 98 years old) successfully done without complications not usually encountered in monocular surgery.

BINOCULAR simultaneous cataract extraction is a controversial subject that is seldom discussed in the literature. Prevailing opinions favor the monocular removal of bilateral cataracts. All authorities agree, however, that the type of operation employed depends on the individual case and on the experience of the surgeon. There are a number of circumstances that favor binocular simultaneous cataract extraction. Patients dread the prospect of having one eye operated upon and knowing that another operation is planned for the other eye at some future date. The ophthalmologist may have convinced the patient prior to the first operation, but when the time comes for the second operation the patient frequently asks: "Why didn't you do both eyes and have it over with?" "If this eye didn't turn out good, can you guarantee the other?" "I won't take the chance and go through that again!" Or he may state "I won't go through this again, you should have done both of them while you had me on the operating table!"

Several years ago I conceived the plan of a single hospitalization for cataract patients but with the extractions spaced a week apart. An elderly arthritic woman was one of the first to undergo this routine. Her systemic condition was such that two operations, separated by an indefinite interval of time, would have been a true hardship. Because of the successful results in this case, not only from the surgical but from the psychologic point of view, the same procedure was followed in a series of 21 cases. In all these cases the relief and pleasure of the patient and his family that the entire ordeal was over was impressive. Another favorable aspect was that when serious late complications occurred, or were present in one eye, the other eye had been operated upon and vision was maintained. In spite of the unfortunate condition in one eye, the patient's concern was lessened because he could still use the other.

When the fundus is not visible preoperatively and the operation reveals [illegible] injuries, etc., [illegible] better after the operation than it was before. In such circumstances a patient is not easy to convince of the need for surgical intervention in the other eye. One patient, at the time of the first operation, revealed senile central degeneration. Although his vision was poor, he declined operation on the second eye until two years later. The visual result of the second operation was 20/20 with correction, but because of the unfortunate condition of the eye first operated upon, the patient had needlessly endured partial blindness for two years.

Unilateral extraction of cataract may cause diplopia, and the patient, if the eye not operated upon is the dominant eye, may refuse to wear glasses and complain bitterly of confusion and dipolpia. One patient learned to suppress vision in one eye, with the result that she had trouble in focusing and the eye turned inward. Finally, she and her family were convinced that the second eye should be operated upon, but a year passed before she could use both eyes together and overcome suppression.

After the success attained with cataract extractions performed a week apart, as well as four days apart, I was approached by a patient who insisted that the two cataracts be removed simultaneously. Because prevailing ophthalmologic opinions discouraged this procedure, the cataracts were removed at an interval of two days. The results were highly satisfactory. This encouraged me to perform binocular simultaneous cataract extractions.

Up to the time of writing 18 cataract operations have been performed for bilateral cataract one week apart; 3 extractions, four days apart; 2 operations, two days apart, and 21 bilateral extractions on the same day. The results in the last group compare favorably with those of monocular extractions.

Some of the objections to bilateral simultaneous extraction include the possibility of infection, postoperative complications and secondary complications, as well as systemic disease.

There is no reason why infection should be more prevalent in a binocular cataract extraction than in a monocular cataract extraction. The same aseptic conditions should prevail.

Postoperative complications may mean that both eyes will be lost, but there are cases on record proving that both eyes can be lost through similar complications, even though the cataract operations were performed after what was considered a suitable interval.

Secondary complications may not interfere with the eyes. For example, in one woman, five days after bilateral cataract extraction, acute suppurative parotitis developed on the left side. The eyes were treated only by cursory cleaning during her severe illness. Nevertheless, two months later all but one suture had fallen out, and corrected vision was 20/20 in both eyes.

Even old, debilitated and irrational patients may be benefited by simultaneous extraction of bilateral cataracts. In 1 case, with additional complication of bilateral glaucoma, neither postoperative bandages nor a mask could be applied. Nevertheless, recovery was uneventful, the glaucoma was controlled, and the patient was able to feed herself and to see with a +10.00 sphere.

Bilateral operations have also been successful in diabetic and hypertensive patients. In fact, if postoperative complications occur in one eye only, the patient is not so apprehensive, because the other eye is functioning. An example is the monocular development of a large hyphema, with complete filling of the anterior chamber, in a woman ten days after the operation. This patient had the use of her other eye, and knew only that one eye was "a little weak" after the operation. Three months after the hyphema occurred, the eye had 20/30 vision with correction.

Surgical Technic.—A brief outline of the surgical technic preferred in performing bilateral simultaneous cataract extraction is as follows: 1. Approximately 8 cc. of xylocaine with epinephrine is injected around each eye, the Van Lint technic being employed, and 1 cc. is injected retrobulbarly. To assure better akinesia, a few drops are also placed behind the insertion of the superior rectus muscle and a few drops into the lower fornix. Massage of the eyeball according to the Chandler method softens it sufficiently to eliminate the need of hyaluronidase.

2. A superior rectus stay suture (No. 4-0 silk) is placed.

3. A slight modification of the Park speculum is used.

4. A 4 mm. limbus hinged conjunctival flap is prepared.

5. A modified McLean groove incision is prepared 1 mm. behind the limbus, and five No. 6-0 silk preplaced corneoscleral sutures are inserted, the loops being left open.

6. The anterior chamber is opened with the keratome and scissors to 180 degrees.

7. Peripheral iridectomy is performed. A round pupil, whenever possible, is preferred.

8. The lens is grasped at 6 o'clock beneath a dilated iris with a Castroviejo forceps (cross action) and delivered intracapsularly by the tumbling technic.

9. The incision is cleansed, the iris reposited and the sutures drawn up and tightened. Five or six No. 6-0 silk sutures are used to insure tight closure of the conjunctiva.

10. The introduction of a large air bubble, when possible, is routine.

11. A dressing is applied postoperatively and removed the next day.

12. Routine postoperative treatment is prescribed. The patient may be allowed out of bed within one or two days and permitted to go home within five days, if he is eager to leave the hospital.

13. After six weeks, refraction is performed; +10.00 spheres are usually given at the first office visit, ten to fourteen days after the operation.

Reasons for a Bilateral Procedure.— The advantages of a bilateral extraction are as follows:

1. *Hospitalization:*
   - a. It decreases the time and cost by 50 per cent.
   - b. It removes the fear of a return trip to the hospital.
   - c. Old and debilitated persons are subjected to less confinement and relieved of a double operation.

2. *Vision:* The binocular procedure insures better vision:
   - a. When there is an undetected pathologic condition in one eye prior to operation, the fellow eye may give very good vision, or vision at least adequate to the patient's happiness.
   - b. Binocularity is maintained. There is no readjustment of visual patterns, first depending on monocular vision and then trying to achieve binocular vision when the second eye is operated upon at a later date.
   - c. Postoperative hyphema is less disturbing, especially in the diabetic patient, if the fellow eye continues to maintain vision.

Reasons for Not Attempting the Bilateral Procedure.—1. Bilateral cataract extraction should not be done by either a young or an older ophthalmologist until his technic is so well established that every

move has become second nature and he may proceed with exactness and speed from one eye to the other.

2. It should not be done under insurance plans unless the surgeon is willing to accept one-half the fee for the second eye.

RÉSUMÉ

L'auteur expose une série de cas d'extraction simultanée bilatérale de la cataracte. L'opération on a été pratiquée sur toutes les catégories de malades, sans tenir compte de leur état physique ni de complications éventuelles. Cette méthode a été couronnée de succès également dans les cas suivants : diabète, hypertension, insuffisance cardiaque, psychose, arthrite déformante. Le série de l'auteur comprend des malades âgés de plus de 90 ans et deux de moins de 50 ans (un de 32 ans, un de 98 ans).

La satisfaction des malades aussi bien que de leur famille s'est montrée des plus encourageantes. Les avantages et les désavantages de ce procédé sont analysés, et l'auteur exprime l'espoir que sa contribution encouragera davantage d'ophtalmolgistes expérimentés à tenter l'extraction simultanée bilatérale de la cataracte.

RESUMEN

Se trata de una serie de casos de extracción bilateral simultánea de cataractas. Tales operaciones han sido hechas en toda clase de enfermos independientemente de su estato físico o complicaciones. El autor ha operado sin más pegas que en los casos de cirugía monocular enfermos hipertensos y diabéticos, insuficientes cardíacos, enfermos mentales, con reumatismo deformante, enfermos de menos de 50 y de más de 90 (uno de 32 y otro de 98).

El bienestar y la satisfacción del enfermo y de sus familiares son de lo más compensadores. Se estudian los pros y los cantras del procedimiento. Es de esperar que este trabajo sirva de estímulo a los oftalmólogos experimentados para le práctica de la extracción simultánea de la cataracta bilateral.

RIASSUNTO

Viene presentata una serie di malati in cui fu eseguita la estrazione simultanea della cataratta. L'intervento è stato eseguito in pazienti di ogni tipo, senza riguardo per le condizioni fisiche o per le complicazioni. Si è ottenuto il successo in malati diabetici, in epertesi, in malati con insufficienza cardiaca, in psicotici, in artritici, in soggetti de oltre 90 anni (uno de 98) e in due di meno di 50.

Vengono elencati gli elemneti a favore e quelli contrari a questo metodo; si spera che il presente articolo spingerà gli oftalmologi a tentare l'estrazione bilaterale simultanea della cataratta.

SUMARIO

Apresenta uma serie de casos de extração simultanea bilateral de cataratas. Executa esta operação em todos os tipos de pacientes sem observancia das condições fisicas ou de complicações existentes.

Os doentes hipertenose e diabeticos, com insuficiencia cardiaca, psicoses, artriticos, acima de90 anos e abaixo de 50 anos (2 casos) foram operados sem complicações o que não tem ocorrido pela pratica da cirurgia monocular.

Diz que o prazer experiementados pelos metodo. Acredita que este trabalho ira estimular os oculista mais experimentados a praticar a extração bilater simultane.

ZUSAMMENFASSUNG

Es wird über eine Reihe von Fällen berichtet, bei denen die gleichzeitige Entfernung eines doppelesitigen Kataraktes vorgenommen wurde. Die Operation er-

folgte an Kranken aller Art ohne Rücksicht auf ihren Körperzustand oder auf bestehende Komplikationen.

Diabetiker, Kranke mit hohem Blutdruck, mit Herzinsuffzienz, mit Psychosen, mit deformierder Arthritis, Kranke von über 90 und zwei von unter 50 Jahren (ein 32 jähriger und ein 98 jähriger) wurden erfolgreich operiert ohne Auftreten von Komplikationen, was von Eingriffen an einem Auge gewöhnlich nicht gesagt werden kann.

Die Erleichterung und die Freude des Kranken und der Familie waren äusserst ermutigend. Das Für und Wider des Verfahrens werden besprochen. Der Verfasser hofft, dass seine Arbeit die erfahreneren Ophtalmologen dazu anregen wird, die gleichzeitige Extraktion eines doppelseitigen Katarakts zu versuchen.

The Anatomy Lesson by Rembrandt. Rembrandt's beautiful paintings appeal to [illegible] generation. One of his best known works is "The Anatomy Lesson of Professor Tulp." The [illegible] expression of some of the students watching the professor demonstrate the muscles of the arm [illegible] Professor Tulp [illegible] Rembrandt [illegible] from the lateral [illegible] *The [illegible]*

[illegible]

Otorhinolaryngologic Surgery

Evolutionary Progress in the Surgical Treatment of Middle Ear Deafness of Otosclerotic Origin

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IN THE normal ear, air-borne sound pressure against the tense tympanic membrane, with the help of the ossicular chain, is transformed into a force acting on the stapes. The stapedial movements produce an increase of pressure on the perilymph and endolymph within the scala vestibuli of the cochlea. Therefore, the eardrum and the normal ossicular chain act as a pressure tranformer between the air and the fluid in the scala vestibuli of the of the cochlea.

Sound pressure in the external auditory canal sets the drum membrane into vibration. Its vibrations compress or dilate the air in the tympanic space, producing an alternating pressure that acts upon the oval window and the round window. In the normal ear, the force produced by the transmission through the ossicular chain is much greater than that produced by the alternating pressure within the tympanic space. There is also a time difference in the action of this force on the oval and on the round windows.

These differences, in sound pressure and in time, in the mobilization of the inner ear fluids, through the oval window on the vestibular side of the basilar membrane, and in the mobilization of the inner ear fluids through the round window on the tympanic side of the basilar membrane, put the basilar membrane into the most effective vibratory state for the transmission of air-borne sound to the cochlear nerve.

One can understand the movements in the cochlea by comparing it to a U-shaped tube filled with fluid, with the openings covered by membranes of varying stiffness. The stiffer membrane represents the oval window and the softer membrane the round window. Displacements of the fluids (perilymph and endolymph) within the U-tube correspond to displacements of a section of the basilar membrane. In such a U-tube, movements of the fluids will be produced only if the pressures acting on the windows differ either in size or in phase. In the normal ear a difference in pressure between the two windows is produced by the ossicular chain acting with increased force upon the stapedial footplate. On the other hand, the sound pressure acting upon the round window membrane is decreased in comparison with the sound pressure in the external auditory canal acting upon the eardrum. This decrease in pressure is caused by the fact that the sound pressure cannot immediately act upon the round window membrane but has to be transmitted through the tympanic membrane and tympanic space to reach it. It is this difference between the pressures upon the fluids of the

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scala vestibuli and the scala tympani which enables air-borne sound to produce the movements of the basilar membrane.

In middle ear deafness secondary to otosclerosis, the mobility of the stapes footplate is decreased because of progressive stapedial footplate ankylosis. To go back to the analogy of the U-tube, closure of one opening will immobilize the whole fluid column in the tube because the fluid has no elasticity. A similar situation within the cochlea is produced by ankylosis. This interference with the mobilization of the fluids within the scala vestibuli by air-borne sound, in the presence of normally mobilizable fluids within the scala tympani of the cochlea, is sufficient to prevent the necessary vibratory state of the basilar membrane that is essential for hearing normally-voiced speech.

Any surgical technic for improvement of hearing in a person with middle ear deafness secondary to stapedial ankylosis of otosclerotic origin should be designed to effect remobilization of the inner ear fluid and should fulfill two important conditions: 1. It should provide means for predicting preoperatively, in each individual case, the possibility of restoring hearing to the 30-decibel level or higher in the three speech frequencies. Improvement of hearing to at least that level is essential if the need for a hearing aid is to be avoided. 2. It must be planned so that the progressively growing otosclerotic tumor within the region of the oval window will no longer affect the newly established mobility of the inner ear fluids.

A survey of progress in surgical technics for improvement of hearing in the presence of middle ear hearing loss of otosclerotic origin properly begins with the surgical efforts of great otologists of the closing decades of the nineteenth century.

From its inception, the progressive development of the Lempert surgical procedure for improvement of hearing when deafness is of otosclerotic origin has been based on this principle: Any surgical technic for improvement of hearing in patients with middle ear deafness secondary to stapedial ankylosis should be designed to effect remobilization of the fluids of the inner ear.

The historical background of the fenestration operation is surveyed; evolution of the Lempert-Fenestra Nov-Ovalis operation is traced. The most effective means and methods of accomplishing remobilization of the fluids of the inner ear are described in detail. These include placement of the new fenestra (to replace the otosclerotically impeded oval window) outside the middle ear in the widest part of the dome of the vestibule; use of the cupola technic to avoid producing bone dust and the necessity for its removal; control of every bleeding point as it occurs; use of the invagination technic to insure permanent patency of the new fenestra; in effect, physicoanatomic reconstruction of the inner and middle ear and the external auditory canal, to produce the phase difference essential for remobilization of the fluids of the inner ear.

In 1876 Kessel, after some animal experimentation, pointed out that if the ankylosed stapediovestibular joint could be mobilized without disrupting the ossicular chain, the hearing in that ear should improve. In the next dozen years, a number of other prominent otologists of the day attempted mobilization of the ankylosed stapes in otosclerosis.

The first report of an operation [illegible] of cases of stapes mobilization came from Boucheron in 1888, the operation being described as "separation of the incus from the stapes; excision of the posterior half of the tympanic membrane; mobilization of the stapes by gentle traction by means of a hook; moving the stapes back and forth and up and down by traction on the stapedial muscle; and in some cases, removal of the malleus and incus." This author said that favorable results might be obtained in early stages of ankylosis, but if bony ankylosis and involvement of the "sound perceiving" apparatus were present, "it is too late to operate."

In 1890, in *France, Miot* reported on 126 cases of attempted mobilization of the stapes and described the technic of his operation in minute detail. "After opening the tympanum, pressure is exerted on the incudo-stapedial articulation by a special 'palette,' the pressure being made gently and repeated several times. If this is not successful in mobilizing the stapes, the instrument is withdrawn and reintroduced against the anterior border of the large branch of the incus, immediately above the incudo-stapedial articulation, and pressure made so as to draw the stapes somewhat out of the oval window. If it is immobile, the malleus also may be mobilized." Miot reported, "In cases of long standing . . . if these cases are rapidly progressive, the results of the operation are slight. Surgery gives the best results when the ankylosis is in its beginning stage."

In 1894, Dr. Frederick L. Jack reported his experiences with attempted mobilization of the stapes. He said, "Most operations for mobilizing the stapes or freeing the oval window must be looked upon as largely experimental," and "in many cases a fracture of the crura occurs at the time of attempted expulsion, leaving the base plate."

In 1898, a different approach to the problem was made by Alderton. After failing to obtain hearing improvement with catheterization, he next tried cutting the stapedius tendon. He then removed the incus through a perforation in the tympanic membrane. A further operation was later tried for removal of the stapes, but in this attempt the crura came away, leaving the footplate behind. In a final operation on the same patient a hole was drilled through the stapedial footplate with a guarded trephine.

Alderton described this case in a paper entitled, "Trephining of the Stapedial Footplate for Otitis Media Sclerosa," *which he read at the Thirty-first Annual* Meeting of the American Otological Society, held in New London in July 1898. The conclusion of the paper read:

> "Apparently in otitis media sclerosa, nothing permanent is gained by the attempt to remove or break through the foot-plate of the stapes, and although nothing disastrous is to be looked for as the result of such an attempt, yet the writer, as the result of his experience, would counsel against the operation."

Alderton read a second paper at that meeting, followed by a discussion in which Doctors Blake, and Jack took part, with Dr. E. A. Crockett of Boston, also participating. Commenting on Dr. Alderton's statement that if interference with the stapes apparently did not promise much benefit, it apparently would not do harm, Dr. Crockett said:

> "I happen to have had two cases in which total deafness resulted, where the patient heard ordinary voices (at three feet) before the operation . . . In one the usual incision in the drum-head was made and the incus disarticulated without trouble; but immediately following the cutting of the stapedius muscle, which could be plainly seen, the patient exclaimed that he could hear nothing. I tested him

immediately and found that he was almost totally deaf to all sounds. I am sure no injury was done to the stapes; it could be plainly seen and was perfectly movable. The operation was continued and the stapes removed. This patient had had only a very slight tinnitus before the operation; but within a few hours a very loud pulsating tinnitus began which continues to the present day. The hearing loss was permanent. In the second case the experience was similar. I believe the process in this case to have been a hemorrhage into the labyrinth; perhaps from a rupture of capillaries at the moment the labyrinthine pressure is relieved by the interference with the stapes. I am decidedly of the opinion that no form of middle ear operation is free from danger of a permanent decrease of hearing."

In 1900, the nineteenth century trials of surgical treatment of otitic "sclerosis" were brought to a temporary end when Siebenmann wrote: "All clinical experience with endeavors at mobilization of the stapes is useless. Not only useless," he said, but "often even harmful since the fixation of the stapes in cases of 'progressive spongiosity' takes place by ossification of the periosteum. The periosteal ossification is generally directly produced and maintained by irritations of the periosteum. Avulsion of the stapes is no more successful."

Thus the early attempts to obtain hearing improvement in the presence of otosclerosis failed in several ways: 1. Activation of the ankylosed stapediovestibular joint failed to permanently remobilize the fluids of the inner ear, because these early attempts were based on no definitely prescribed means for liberating the ankylosed joint without disrupting the ossicular chain. 2. No means had been found of predicting preoperatively the possibility of improving the hearing. 3. Even in those cases in which there was successful remobil-ization of this joint the pioneers in this type of surgery did not succeed in developing definite procedures for prevention of reankylosis of the stapediovestibular joint in order to maintain permanently the newly obtained endolymph mobility. After 1900 there is little or no mention in the literature of attempts to improve hearing by mobilization or extraction of the stapes.

The next surgical principles put forward by the otologists of the day belong to the history of the fenestration operation. About 1910 Barany made known his observation that an opening made within the external semicircular canal in the presence of good cochlear nerve function (evidenced by good hearing through bone conduction) *always resulted in an immediate hearing improvement.* Other otologists of the day confirmed the phenomenon: that fistulization of the labyrinth—even the minutest opening—provides hearing improvement in cases of stapedial ankylosis of otosclerotic origin. This principle was proved physically and physiologically correct. Thus immediate improvement of hearing, through fistulization of the external semicircular canal, became predictable in advance.

Thereafter the research problem had two aspects: (1) finding ways and means for obtaining the optimum degree of hearing improvement that could be expected in every case, and (2) devising methods for maintaining continuously and permanently the improvement first obtained. This research was persistently and tirelessly pursued, mainly by Holmgren, by Sourdille and by me. Our efforts culminated successfully with my development of the present universally employed, successful, one-stage Fenestra Nov-Ovalis technic. This technic (1) makes it possible to predict both the successful creation of the physico-anatomic conditions needed for remobilizing the inner ear fluids by air-borne sound through the newly created vestibular fenestra, [illegible]

100 per cent of cases of stapediovestibular ankylosis; and (2) prescribes methods for prevention of subsequent recurrence of impediment to the mobility of these fluids, in 95 per cent of the patients successfully operated on.

This technic has withstood the test of time. The surgical principles on which it is based provide a method for consecutive, consistent and successful restoration of serviceable hearing and permanent maintenance of the improved hearing, in ears deafened by ankylosis of the stapediovestibular joint, of otosclerotic origin.

More fully described, the guiding principles on which the Fenestra Nov-Ovalis procedure is based are:

1. The overall procedure includes means of predicting preoperatively the possibility of surgically improving the hearing for air-borne sound (by surgically mobilizing the fluids of the inner ear) to at least the 30-decibel level, in the 512, 1024 and 2048 frequencies, the speech frequencies. The ability to hear at these levels, which should be evident immediately, on the operating table, is necessary for practical, serviceable, unaided hearing acuity.

2. The surgical technic employed is capable of restoring practical serviceable hearing in a given ear no matter how low the preoperative audiometric reading for air-borne sound happens to be for the three speech frequencies, so long as the masked bone-conduction hearing for pure tone in these frequencies has not fallen below the 20-decibel level.

3. The technic employed incorporates definitely prescribed, time-proved means for deliberately conserving and permanently maintaining the hearing newly regained by the operation despite the continuity of growth and spread of the otosclerotic tumor.

The operative procedure—designed to permit accomplishment of the foregoing objectives—has two major aspects. 1. The technic must create a new vestibular window to replace the covered oval window within the middle ear, where hearing has been impeded by the otosclerotic lesion. To achieve this it must be placed *outside* the middle ear, where it will be beyond the area to which the progressively growing otosclerotic tumor has been known to spread. This is one factor that helps to insure the permanent patency of the new fenestra. 2. It must provide means for covering the new vestibular window. The functional importance of this is of particular concern, since an uncovered vestibular window not only may jeopardize the patient's cochlear nerve function, but it may give rise to postoperative labyrinthine infection secondary to middle ear infection. The result of such infection can be fatal.

It is of great acoustical importance to place the new vestibular fenestra outside the middle ear and to cover and seal it off without leaving any direct connection between the middle ear and the new vestibular window. This increases the sound pressure difference between the round cochlear window and the surgically created vestibular window. In this way the sound pressure acting upon the intratympanic cochlear window is relatively less than the sound pressure acting on the newly created extratympanic vestibular window.

A more detailed consideration of the necessary physico-anatomical reconstruction of the middle and outer ear involves:

1. *The Creation of a New Vestibular Fenestra to Replace the Functionally Impeded Ossicular Chain and Oval Window.* —For the effective channeling of air-borne sound pressure through the perilymph and endolymph within the scala vestibuli of the cochlea toward the basilar membrane, a new fenestra is created outside the tympanic cavity in the surgical dome of the vestibule.

The new vestibular fenestra should be made as wide as possible. It is a well-established fact that neither the length nor the width of the fenestra created has any bearing upon the degree of hearing improvement immediately obtainable upon penetrating the osseous wall of the external semicircular canal and prior to covering the opening with the membranous flap. Even a pinpoint perforation communicating with the perilymph space will result immediately in the highest degree of hearing improvement possible in a given ear. Since, however, such a fenestra necessarily must be covered and sealed with a cutaneous membrane for the protection of the membranous endolymphatic labyrinth, the degree of hearing improvement obtained under such circumstances will depend upon: (a) the width of the newly created fenestra; (b) the shape of the fenestra; (c) the flexibility of the portion of the flap covering the fenestra region; (d) the thickness of this portion of the flap. Since all these interdependent factors, both individually and collectively, will influence the degree of resistance to air-borne sound pressure offered by the covered and sealed newly created fenestra, I found that a wide, round vestibular fenestra covered and sealed with the most flexible and thinnest periosteum-lined portion of the tympanomeatal flap will result in the most effective remobilization of the inner ear fluids.

This is also an important reason why the fenestra should be made in the surgical dome of the vestibule where the perilymph space is widest, instead of within the narrow portion of the external semicircular canal posterior to the ampulla, wherein a fenestra wide enough for this purpose cannot be made.

The best improvement of hearing is obtained when the fenestra is made not only as wide as possible but as round as possible, provided the area of the window in both instances is the same. This is best accomplished by maintaining the usual length of the fenestra and widening the fenestra area laterally, on both sides, until it is converted into a round opening. A round window is also less likely to close than is is an oval window, in which the walls are obviously closer together. A round fenestra covered with the membranous flap is least resistant to sound pressure and therefore can permit and maintain the maximum improvement in hearing afforded by the status of the cochlear nerve function.

If one employs the cupola technic and thus avoids pulverization of the endosteal bony layer of the labyrinthine capsule, loss of bone-dust and bone slivers within the perilymph space, commonly resulting from the use of the pulverization technic, is avoided. Perilymphatic osteogenesis, which is incorrectable, is thereby prevented. The cupola technic also prevents injury to the membranous labyrinth, which can result from attempts to retrieve bone splinters lost within the perilymph space. The cupola technic likewise reduces the frequency and severity of postoperative serous labyrinthitis by eliminating the trauma the membranous labyrinth is subjected to in attempts to retrieve bone chips which may enter the perilymph space when the pulverization technic is used. The cupola technic obviates injury to the perilymphatic trabeculae, with bleeding into the perilymph space, which can result in perilymphatic fibrosis and thus prevent the necessary remobilization of the inner ear fluids for the improvement of hearing.

Irrigation and suction must be avoided after opening the perilymph space in order to prevent postoperative inflammatory reaction of the membranous labyrinth, which is responsible for postoperative temporary vertigo and recruitment. This can be accomplished only by using the cupola technic for creating the fenestra, whereby the cupola is removed intact and irrigation is unnecessary, whereas in the pulverization technic irrigation is essential for removing bone dust from the perilymph space of the newly created fenestra. The membranous labyrinth will fare best when left to bathe in its own vestibular perilymph.

The fenestra nov-ovalis must be sealed with the intact tympanomeatal flap in order to retain the perilymph and prevent subsequent degeneration of the membranous endolymphatic labyrinth. Its importance lies mainly in conserving the hearing improvement that immediately follows the creation of the labyrinthine fenestra. The tympanomeatal membrane for sealing the fenestra nov-ovalis has been proved best, physico-anatomically, physiologically and biologically for reaching the desired goal with fenestration of the vestibular labyrinth.

Neither the creation and opening of the fenestra nor the covering and sealing of the newly created fenestra with the tympanomeatal flap should ever be conducted in the presence of even the slightest bleeding. The minutest bleeding point observed within the membranous and bony tissues must be controlled. The entrance of blood into perilymph space can readily result in fibrosis within this space, with resulting immobilization of the perilymph and endolymph by air-borne sound. Furthermore, neither the most meticulous control of bleeding during fenestration nor the covering and sealing of the fenestra with the tympanomeatal flap in the presence of an absolutely dry, bloodless field is a guarantee that bleeding from the inner surface of the tympanomeatal flap into the perilymph space will not take place postoperatively when the surgically trimmed, thinned-out meatal portion of the tympanomeatal flap is used for covering and sealing the fenestra gap. It is for this reason that the flap must be plastically so created that its thinnest untrimmed portion nearest to the tympanic membrane, with its intact periosteum-lined surface, will reach, cover and seal the fenestra. Only thus can postoperative bleeding into the perilymph space from the inner surface of the flap be prevented. Such postoperative bleeding may not only prevent the improvement of hearing but may even result in a greater hearing loss. To facilitate the use of this part of the tympanomeatal flap in covering the fenestra, the fenestra must be made as far forward on the surgical dome of the vestibule as possible and as close to the facial canal on the anterior wall of the vestibular dome as possible.

This thinnest portion of the flap, when employed to cover the new fenestra, serves best the immediate remobilization of the inner ear fluids of the cochlea, because it is also the most flexible portion. It also serves best to maintain this mobilization of these fluids, because its periosteum-lined inner surface, having remained intact and surgically unharmed, does not undergo fibrotic changes, and thus it continuously maintains its original flexibility for air-borne sound pressure. If, however, the tympanomeatal flap is poorly constructed and only the thick portion thereof can be made to reach and cover the fenestra, it is best not to trim its inner periosteal surface in order that it may maintain its flexibility. Use of the thick portion, however, whenever possible, should be avoided. Since the size of the fenestra is generally uniform, the mobility of the portion of the flap covering the window will decrease rapidly if the thickness of the flap is increased. This is true even if the mechanical properties of the tissues, whether the flap is thin or thick, remain the same.

To prevent osteogenetic repair from

taking place postoperatively, with ultimate osteogenetic closure of the newly created fenestra and consequent loss of hearing gain, the portion of the tympanomeatal flap facing the fenestra must be invaginated into the fenestra gap sufficiently to come into contact with and become adherent to the fenestral rim margins.

Although it is true that the creation of a new vestibular fenestra to replace a functionally impeded oval window resulting from stapedial footplate fixation secondary to otosclerosis will, in the absence of cochlear nerve damage, immediately improve the hearing in a given ear. The permanent maintenance of this hearing cannot be deliberately achieved without the correct use and aid of the all-important flap.

In 1938 I advanced the theory that invagination into the fenestra gap of the portion of the tympanomeatal flap which covers the newly created fenestra, so that it adheres to the bony fenestra rim, will prevent osteogenetic closure of the fenestra. This theory, reiterated in 1945 and proved in 1950, has withstood the test of time. For the first time in the history of the fenestration operation it has become possible deliberately, consistently and consecutively to prevent osteogenetic closure of the newly created fenestra in the surgical dome of the vestibule.

2. *The Physico-Anatomic Reconstruction of the Middle Ear.*—In order to remobilize the inner fluids of an otosclerotic ear and put the basilar membrane into the most effective vibratory state after the fenestration operation, it is necessary to create a phase or intensity difference between the forces acting on both window membranes. This is accomplished best by the following steps: (a) Disruption of the functionally impeded ossicular chain by removal of the incus, which is done in order to free the tympanic membrane from the incumbrance of the ossicular chain and thus prevent interference (by the remaining, partially mobilizable stapes) with the movements of the inner ear fluids produced by the newly created vestibular fenestra; and (b) the sealing of the tympanic air space with the intact tympanic membrane that forms a portion of the intact tympanomeatal flap, in order to isolate the tympanic air space from the newly created vestibular fenestra. To accomplish this most successfully it is necessary to resect the head and neck of the malleus.

The sealing of the tympanic air-space and its isolation from the newly created extratympanic fenestra are essential to the effective remobilization of the inner ear fluids within the scala tympani of the cochlea through the round window membrane. The intensity of the air-borne sound pressure against the tympanic portion of the tympanomeatal flap sealing the tympanic cavity is the same as that of the sound pressure against the meatal portion of the flap sealing the newly created vestibular fenestra. This pressure is nevertheless considerably weakened by the time it reaches the round window membrane in its course from the tympanic membrane through the air-filled tympanic cavity and round window niche. The difference in the magnitude and phase of the sound pressure through the vestibular and cochlear windows is essential to obtain the vibratory state of the basilar membrane most effective for the improvement of hearing in patients with clinical otosclerosis. Thus the tympanomeatal flap, when properly made and used to seal off and separate the newly created extratympanic vestibular fenestra and the tympanic air space harboring the round cochlear intratympanic fenestra plays a most important role in the remobilization of the inner ear fluids necessary for the restoration of hearing to a serviceable level.

The importance of the correct surgical

construction of the tympanomeatal flap and its correct placement to seal both the new fenestra and the tympanic air-space can be readily understood when one observes that the hearing is not improved if a tympanomeatal flap is incorrectly fitted and placed so that the tympanic air-space is not rendered air-tight. A leakage of air from the tympanic cavity, whether it be from a poorly sealed tympanic space or from a perforation, no matter how small, within the tympanic portion of this flap, will not only prevent the improvement of hearing but may even increase the hearing loss. A taut, tense and intact tympanic membrane is needed to provide the essential pressure difference between the two windows. When the flap is placed so that the tympanic membrane is not tightly stretched and stiffened, its resistance to sound pressure will not be adequate to decrease the pressure against the round window membrane sufficiently to create the necessary difference in sound pressure between the two windows.

3. *The Physico-Anatomic Reconstruction of the External Auditory Canal.*—Results obtainable from fenestration indicate that it is advisable to permit the direct and simultaneous approach of air-borne sound pressure to both the covered and sealed new vestibular extratympanic fenestra and to the covered and sealed reconstructed tympanic air-space. It is essential to render the new vestibular fenestra as readily approachable by air-borne sound pressure through the external auditory canal as is the reconstructed covered and sealed tympanic air space. This is accomplished by endaural exteriorization of the extratympanic fenestra nov-ovalis. Such exteriorization comprises removal of the entire posterior wall of the external auditory canal, which widens its inner aspect and exposes to direct view and approach, through the widened external auditory canal, both the tympanic membrane covering the tympanic cavity and the meatal cutaneous portion of the tympanomeatal flap covering the newly created extratympanic vestibular fenestra. As a result of such exteriorization of the fenestra nov-ovalis, the air-borne sound pressure that reaches both the covering of the tympanic air space and the covering of the fenestra nov-ovalis is equal in intensity and time. Since the inner surface of the portion of the flap which covers the newly created fenestra lies in direct contact with the perilymph and the endolymphatic labyrinth, however, the sound pressure striking it mobilizes the inner ear fluids within the scala vestibuli of the cochlea without loss of intensity or time; whereas the sound pressure against the outer surface of the tympanic membrane, being separated from the cochlear perilymph and endolymph by the tympanic round window membrane, reaches the round window membrane to mobilize the inner ear fluids within the scala tympani of the cochlea with a loss of energy and a loss of time. It is this difference, between the moments when the displacements of the vestibular and cochlear fluids by sound energy reach their maximum, which is the essential factor for putting the basilar membrane into the vibratory state needed for the improvement of hearing in middle ear deafness secondary to otosclerosis. If the sound pressure reaches both the new vestibular window and the cochlear round window with equal intensity and in equal time, the basilar membrane cannot be put into a vibratory state.

When every step in the physico-anatomic reconstruction of the external middle and inner ear, essential to the remobilization of the inner ear fluids, is meticulously and successfully executed by the otologist, it should result in improvement of hearing commensurate with the degree of cochlear nerve function existing in the given ear. The test of time has proved my physically explainable, planned technic to be correct and universally acceptable.

If, in the presence of good cochlear nerve function, the air-conduction hearing is not improved, or if it fails to reach the height expected after the fenestration operation, it must be concluded that the physico-anatomic reconstruction was faulty—even though the fault may not be evident to the surgeon. Adequate remobilization of the inner ear fluids was not accomplished. The fenestra nov-ovalis operation is a most exacting surgical technic, requiring the most meticulous attention to all the factors influencing air-borne sound pressure.

Wever and Lawrence have experimentally confirmed my theory that the improvement of hearing following the fenestration operation is dependent upon successful remobilization of the fluids of the inner ear. They state, "The fenestration operation, as we have seen, effects a remobilization of the cochlear fluid."

The time-proved Fenestra Nov-Ovalis technic is to date the only technic that meets every one of the aforementioned requirements for successfully restoring and permanently maintaining hearing in the presence of clinical otosclerosis. This technic renders the successful creation of the physico-anatomic conditions needed for remobilizing the inner ear fluids by air-borne sound predictable preoperatively in 100 per cent of cases of stapediovestibular ankylosis of otosclerotic origin. It also renders predictable the permanent maintenance of the physico-anatomic state needed to prevent the recurrence of impediment to the mobility of these fluids. It is for this reason only that this technic has been universally adopted and employed successfully for the past nineteen years, for the restoration of serviceable hearing in cases of clinical otosclerosis, by otologists with special training in modern temporal bone surgery.

RESUMEN

El desarrollo progresivo de la técnica quirúrgica de Lempert para la mejoría de la audición cuando le sordera es de origen otoesclerótico se basa en el princpio siguiente: toda técnica guirúrgica para mejorar la audición en enfermos con sordera del oído medio consecutiva a anquilosis estapedia debe tener como fin la movilización de los líquidos del oído interno.

Se pasa revisión al fundamento histórico de la fenestración y se delínea la operación de Lempert. Se describen en detalle los métodos más efectivos 1 para movilización de los fluídos intraauditivos. Se incluye entre estos la prática de una nueva ventana para reemplazar la oval lesionada por la otoesclerosis y que se practica en la parte externa del oído medio y la porción más ancha de la cúpula del vestíbulo; trabajo sobre la cúpula para evitar el polvillo óseo; control de cada punto que sangre; técnica de la invaginación para asegurar la utilidad permanente de la nueva fenestra; en fin, re construcción fisico-anatómica de los oídos medio e interno y del canal auditivo externo para lograr una buena remobilización de los liquidos del oído interno.

ZUSAMMENFASSUNG

Die fortschreitende Entwicklung des Lempertschen chirurgischen Verfahrens zur Verbesserung des Hörvermögens bei otosklerotischer Taubheit beruht seit den ersten Anfängen der Lempertschen Arbeit auf dem Grundsatz, dass jede chirurgische Technik zur Behandlung der Hörfähigkeit von Kranken mit Mittelohrtaubheit als Folge von Steigbügelversteifung darauf ausgehen muss, die Flüssigkeiten des inneren Ohres zu remobilisieren.

Es wird ein Überblick über den ge-

schichtlichen Hintergrund der Fensterungsoperation und über die Entwicklung der Lempertschen Fenestra-Nov-Ovalis Operation gegeben. Die wirksamsten Mittel und Wege zur Erzielung einer Remobilisierung der Flüssigkeiten des inneren Ohres werden im einzelnen beschrieben. Dazu gehören die Einsetzung des das otosklerotisch veränderte ovale Fenster ersetzenden neuen Fensters ausserhalb des Mittelohres in den weitesten Teil der Kuppel des Vestibüls, die Anwendung der Kuppeltechnik zur Vermeidung der Entstehung von Knochenstaub und der Notwendigkeit seiner Entfernung, die Versorgung jedes auftretenden Blutungspunktes, die Anwendung der Invaginationstechnik zur Sicherstellung eines dauernden Offenbleibens des neuen Fensters, d.h. in der Tat die physikalisch-anatomische Wiederherstellung des inneren Ohres, des Mittelohres und des äusseren Gehörkanals, um die zur Remobilisierung der Flüssigkeiten des inneren Ohrs wesentliche Phasendifferenz zu schaffen.

RÉSUMÉ

Dès le début de on application la technique de Lempert pour l'amélioration de l'ouíe dans les cas de surdité par otosclérose a été basée sur le principe suivant: toute technique chirurgicale destinée à améliorer l'ouïe des malades atteints de surdité de l'oreille moyenne consécutive à une ankylose de l'étrier devrait viser à la remobilisation des liquides de l'oreille interne.

L'auteur presente un aperçh des origines de la fénestration et décrit l'évolution de la technique dite de Lempert ("Lempert Fenestration Nov-Ovalis Operation"). Il expose les méthodes les plus efficaces de remobilisation des liquides de l'oreille interne, qui comprennent les techniques suivantes: création d'une nouvelle fenêtre replaçant la fenêtre remplçante la fenêtre ovale sclérosée au-delà de l'oreille moyenne dans la partie la plus large du dôme vestibulaire; application de la technique cupolaire permettant d'eviter d'éliminer la formation de "poussière osseuse"; contrôle immédiat des points de saignement; utilisation de la technique d'invaginnation afin de garantir le bon fonctionnement permanent de la nouvelle fenêtre; en fait: reconstruction physique et anatomique de l'oreille interne et moyenne et du conduit auditif externe, en vue d'obtenir la phase différentielle indispensable à la remobilisation des liquides de l'oreille interne.

RIASSUNTO

Il procedimento chirurgico di Lempert per le sorditâ di origine otosclerotica è basato sul seguente principio: ogni tecnica chirurgica dretta a migliorare l'udito nei malati con sordità da orecchio medio secondaria ad anchilosi della staffa deve essere diretta a mobilizzare i liquidi dell'orecchio interno.

Vengono ricordati i principi storici dell'intervento di fenestrazione e l'evoluzione dell'intervento di Lempert. Il mezzo piú efficace per ottenere la rimobilizzazione dei fluidi nell'orecchio interno è rappresentato dalla apertura di una nuova finestra per sostitutire quella ovale inutilizzata dall'otosclerosi, all'esterno dell' orecchio medio nella parte più ampia del vestibolo. Viene descritto l'uso di una particolare tecnica per evitare la formazione di polvere ossea, che deve essere asportata, e per controllare ogni punto sanguinante, e l'uso della tecnica di invaginazione per assicurare la pervietà della neofinestra; la ricostruzione fiscioanatomica del'orecchio interno e medio e quella del condotto uditivo esterno consentono di rimobilizzare i fluidi nell'orecchio interno.

Section en Francais

Les Kystes Hydatiques du Foie Ouverts dans les Voies Biliaires

(Hydatid Cysts of the Liver Opening into the Biliary Ducts)

PEDRO L. CERESETO, M.D., F.I.C.S.
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This complication, encountered in 10 per cent of the author's cases, causes numerous functional disorders of the liver, which can be fetal. The author discusses the differential diagnosis, the biologic and radiologic diagnosis, the evolution of the condition and the clinical picture. The most important point in his report is his explanation of the mechanism of rupture of the cyst into the bile duct.

Spontaneous cure is extremely rare; the patients, when they survive, remain weak, with many distressing symptoms (attacks of fever, chills, etc.)

The only possible method of treatment is surgical excision of the cyst and exploration of the bile duct. The author reports several cases of this complication.

L'HOMME est l'hôte intermédiare dans l'évolution d'un ver qui est dans l'intestin du chien et qui produit dans l'être humain une formation larvaire kystique, maladie très répandue dans quelques pays éleveurs d'Europe, l'Amérique du Sud, d'Afrique du Nord et d'Australie.

Ce parasite, leténia échinocoque, qui n'a pas plus de deux millimètres de longueur, quand il est amené au systême digestif par la contamination des aliments ou par les mains qui ont été en contact avec les déjections du chien, est mis en liberté dans l'intestin, s'il n'a pas été détruit par le suc gastrique, entre dans le torrent circulatoire, suivant les veines intestinales. C'est alors que le premier organe qui offre une barrière au progrès de l'embryon est le foie, dont l'énorme masse constitue la localisation la plus fréquente de cette maladie après le foie, c'est le poumon, l'organe que choisit le parasite comme lieu de formation vésiculaire de cette affection qui reçoit le nom de "échinococose ou hydatidosis".

Dans le foie, l'embryon hexacante forme une vésicule avec un contenu cristallin qui se nourrit aux dépens de l'hôte et, dans sa croissance, il va déplaçant les tissus de l'organe parasité et les englobant. Mais pendant cette évolution, le parasite, en grandissant, peut lésionner les organes voisins et s'ouvrir dans les cavités péritonéales, pleurales et donner ainsi l'origine

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à de graves complications. Mais celle que nous traiterons ici, c'est celle qui survient quand le parasite, dans sa croissance, lésionne et perfore les conduits billiaires à l'intérieur de la masse hépatique, originant un tableau clinique très caractéristique et de grande gravité, que nous désignerons sous le nom de "kyste hydatique du foie ouvert dans les voies biliaires".

Pour être une complication fréquente: 10%des cas parasités dans le foie; par son indubitable gravité et par les heureux résultats qu'une thérapeutique appropriée peut proportionner, nous considérons que nous devons soumettre ce thème à la considération de cet important Congrès.

Nous avons eu l'opportunité de soigner et de traiter sept patients qui présentaient cette complication et c'est à la base de cette expérience que nous devons présenter ce travail, les caractéristiques les plus éclatantes du procès et les conclusions que ces observations nous ont proportionné.

Tableau Clinique.—Les symptômes que présente le patient qui supporte une échinococosis hépatique, sont habituellement très modérés et très souvent c'est seulement la présence d'une tumeur hépatique qui retient l'attention du malade; à tout cela, on cela, on peut adouter: sensation de plénitude gastrique, dyspepsie et très rarement l'urticaire.

Quand le kyste établit la communication avec les voies biliaires, il survient des manifestations très claires qui, difficilement, passent inaperçues par le patient. Ce sont: la colique hépatique de plus grande on moindre intensité, en raison dircte de la quantité de luquide et vésicules hydatidiques qui entrent dans la lumière biliare; urticaire, par l'absortion du liquide hydatidique, maériel allergisant. A cela se joint plus tard la présence d'une ictérie intermittente de plus grande ou moindre gravité, relationné directement aux crises d'élimination par le cholédoque de vésicules et des restes hydatidiques.

A mesure que le temps passe, à ce tableau s'ajoute l'infection du contenu biliaire et apparaissent les frissons et la fièvre.

Finalement le présence de vésicules dans les *déjections (hydatidenterie)* ou dans les vomissements (hydatidemesis) sont des symptômes d'indubitable certitude quand on les trouve.

Le tableau de ces malades par ce qu'on vient d'expliquer, très similaire au tableau d'une lithiasis cholédocienne infectée et c'est avec elle qu'il est nécessaire d'établir le plus souvent le diagnostic différentiel.

Dans le diagnostic de cette affection, comme dans celui de la complication que nous étudions, ce qui est de la plus grande importance, c'est la présence de cette infestation dans le domicile du malade ou dans lieu d'origine.

La prolixe anamnésie, le tableau clinique et l'aide que proportionnent les études radiologiques, directes ou au moyen de contrastes (colangiographies), ainsi que les preuves biologiques (réaction de Cassoni Imaz Lorentz) l'étude des déjections ou le sondage duodénal, contribuent à effectuer le diagnosticbavec certitude.

Evolution et Pronostic.—Cette complication de l' "échinococose" hépatique livrée à sa propre évolution, offre le tableau d'une maladie incurable, aggravée par de fréquentes crises fébriles et d'ictéricie qui peuvent provoquer la mort du patient par "angiocolitis" ou la formation de multiples abcès hépatiques ou aussi à une cirrhose. La guérison spontanée peut être faite seulement lorsqu'il s'agit d'un petit kyste dont la germinative est évacuée à l'extérieur dans sa totalité. Dans l'enquête que j'ai réalisée entre de nombreux chirurgiens de mon pays et de l'étranger, j'ai trouvé seulement deux cas de propable guérison spontanée par le mécanisme cité.

Mecanisme de l'Ouverture du Kyste Dans les Voies Biliaires.—A mesure que le kyste croit, l'organe parasité, dans ce cas, le foie, forme aux dépens de son tissu conjonctif une enveloppe propre, membrane adventice ou périkystique, laquelle englobe ou obstrue les petits vases et capillaires qu'il trouve pendant son développement.

Au contraire, quand il trouve un capillaire biliaire ou un conduit plus gros, celuici est déplacé et parafois perforé et ainsi mis en communication avec la lumière du conduit bibilaire et la cavité adventicielle. Cette communication peut rester sans lésionner la germinative une période de temps, mais la germinative peu à peu s'insinue dans la lumière du conduit jusqu' à ce que la pression de la vésicule termine par la faire éclater et ainsi verse son contenu dans les conduits biliaires. L'orifice de la perforation est en accord au calibre du conduit: plus grand est l'orifice, plus grande est la quantité de liquide et de vésicules qui entrent dans l'arbre biliaire, et plus francs les symptômes qu'elle produit (coliques, ictéricies).

Si la perforation du kyste se fait dans un petit conduit biliaire, ce qui arrive de plus probable c'est l'infection du kyste, mais il est difficile que par là il s'élimine à l'extérieur. Le kyste s'infecte par les germes amenés par la voie canaliculaire et donne les symptômes dun kyste suppuré.

Traitement.—L'indication dans le traitement de l' "échinococose" hépatique est chirurgicale: évacuation du kyste et de ses membranes. Avec plus de raison, si une complication s'est établie comme l'est l'ouverture dans les voies biliaires. Dans ce cas, à l'extirpation du kyste doit s'ajouter l'évacuation des éléments hydatidiques des voies biliaires et son drainage. En peu de mots, on doit effectuer dans le même acte chirurgical deux interventions: 1° l'évacuation du qyste; 2° le drainage des voies biliaires. Celle-ci est l'opération correcte et celle qui offrira une guérison plus rapide au patient. Mais il arrive que dans quelques cas, on opère le patient avec le diagnostic d'ictéricie mécanique ou ictéricie obstructive et le diagnostic étiologique n'ayant pas été fait avec un malade dans de mauvaises conditions, on l'opère. Le chirurgien peut se voir dans la nécessité de réaliser une unique intervention d'urgence, comme serait l'évacuation du kyste ou—dans le cas de ne pas l'avoir découvert—le drainage du cholédoque. Mais, autant l'une comme l'autre opération ne peut assurer la guérison complète du procès, et on doit réaliser la deuxième intervention si la guérison du procès tarde quelque peu à se manifester. La voie d'abordage le plus convenable est celle qui permet d'explorer la plus grande quantité de surface hépatique et contrant la même sur le kyste, nous donne le champ suffisant pour réaliser l'exploration des voies biliaires. Ceci est généralement possible quand le kyste est d'evolution abdominale, plus difficile quand il est d'évolution supérieure ou thoracique, ayant besoin dans ce cas d'incisions thoraco-abdominales, mais avec la condition si c'est possible d'éviter l'ouverture du fond de sac pleura.

Le contrôle radiologique durant l'operation—ou dans le post-opératoire des voies biliaires—la vigilance des drainages permettront au chirurgien de s'assurer de l'évacuation complète des restes parasitares, et déterminer le moment de l'extraction du tube de Kehr ou les drainage du kyste.

Seuls peuvent se considérer exemptés de l'opération, ces patients qui après l'épisode initial, n'ont pas de symptômes et apparement ont réalisé lévacuation totale du parasite, ceux qui étant porteurs d'un Q.A.V.B. présentent en même temps des lésions d'une telle gravité qu'elles contreindiquant l'opération (tumeurs malignes, insuffisance cardiaque grave, etc. . . . .)

Casuistique.— Nous avons dû traiter sept patients atteints de cette maladie. Six d'entre eux furent opérés avec une ou deux pérations; l'un d'eux ne put l'être car son pparence démontrait qu'il était guéri nais il souffrait d'une autre maladie.

Tous les malades opérés guérirent de eur affection, quelques uns d'entre eux vec un jost-opératoire de plusieurs semines ou mois, en raison de leur affection vancée ou de l'ancienneté de leur compliation, qu'ils supportaient sans traitement jusqu' à ce moment-là.

Le moyen le plus recommandable pour ccélérer la guérison de ces patients est l'importance fondamentale d'un traitement médical antibiotique approprié, ainsi que l'attention personnelle du chirurgien contrôlant les tubes d'écoulement et la sûreté d'un drainage adéquat.

RÉSUMÉ

Cette complication (10% des cas de l'auteur) provoque de nombreux troubles de la fonction hépatique pouvent entraîner une issue fatale. L'auteur en discute le diagnostic différentiel, le diagnostic biologique et radiologique et l'évolution. Le point le plus intéressant de son rapport est constitué par l'explication du mécanisme de rupture des kyste.

La puérison spontanée est extrêmement rare; les malades non traités restent affiablis, avec des accès de fiès et de frissons, ainsi que divers autres symptômes.

Lt chirurgie est la seule thérapeutique indiquée: extirpation du kyste avec exploration du cholédoque.

Editors' Note: An addendum to the monograph *Early French Surgery* by Dr. G. Kasten Tallmadge of Marquette University, which was presented as a lecture in the first series at the International Surgeons' Hall of Fame and appeared as an editorial in the February issue of the Journal, regrettably reached us too late to be included in that issue. We take pleasure in presenting it below.

Historical Note.—Together with Dr. Iago Galdston. of the New York Academy of Medicine. and others. and with members of the Jesuit Community of Marquette University. I have been seeking the original source of the doctrine. *Ecclesia abhorret a sanguine.* It appears that this never was a written statement of principle. but was an unwritten expression of a general position of the Church or some of its members.

—G. Kasten Tallmadge. A.M.. M.D.. Ph.D.

Sección en Español

Palidotomia en el Tratamiento de Algunas Disquienesias: Tecnica Personal

(Pallidotomy in the Treatment of Various Dyskinesias: Personal Technic)

MANUEL M. VELASCO-SUÁREZ, M.D.*

MEXICO D. F., MEXICO

The author has developed a technic of his own for pallidotomy, which he employs in treating various types of dyskinesia. The operation is usually performed with the operative region under local anesthesia, the position of the cannula being controlled roentgenographically. The instruments employed are shown in a line drawing, as is the precise field of operation. Control roentgenograms are also presented. Electromicrographs and cinematigraphs are also taken preoperatively and postoperatively.

EL tratamiento médico poco eficaz para corregir los movimientos involuntarios anormales, el temblor y los trastornos del tono muscular, viene determinando la necesidad de buscar no sólo nuevas drogas sino también la posibilidad de corregir, o por lo menos moderar, los temblores parkinsonianos y los complejos desórdenes de movimiento comunes en las coreas, en la degeneración hepatolenticular, enfermedad de Wilson, pseudo esclerosis, distonía lnticular, degeneración palidal progresiva, atetosis y algunas mioclonias.

En realidad, las distintas disquinesias que ocurren en las afecciones señaladas nos recuerdan la primitiva expresión de Strümpell de "complejo sintomático amiostático", como resultado de un trastorno funcional o estructural de una, varias o muchas de las conexiones entre los ganglios basales.

Los componentes clínicos de estos síndromes dependen de la unidad anatómica, funcionalmente más comprometida en la facilitación o inhibicción de diferentes impulsos que figuran en el mecanismo regulador de la actividad motora en distintos niveles (corteza, estriado, tálamo, pálido, núcleo rojo, cuerpo de Luys, tracto dentatorubro, sistema frontopontocerebeloso, sistema de Deiters . . .).

Brevemente conviene recordar las salientes fisiológicas fundamentales para el movimiento, de las estructuras señaladas:

El *Estriatum* es un centro de regulación de la expresión facial, de los movimientos reactivos ante el susto, el miedo y en la defensa. Controla los movimientos de autoprotección contra el dolor, regulando cambios automáticos posturales y, además, parece ejercer funciones sobre el *efecto regulador palidal del tono muscular.*

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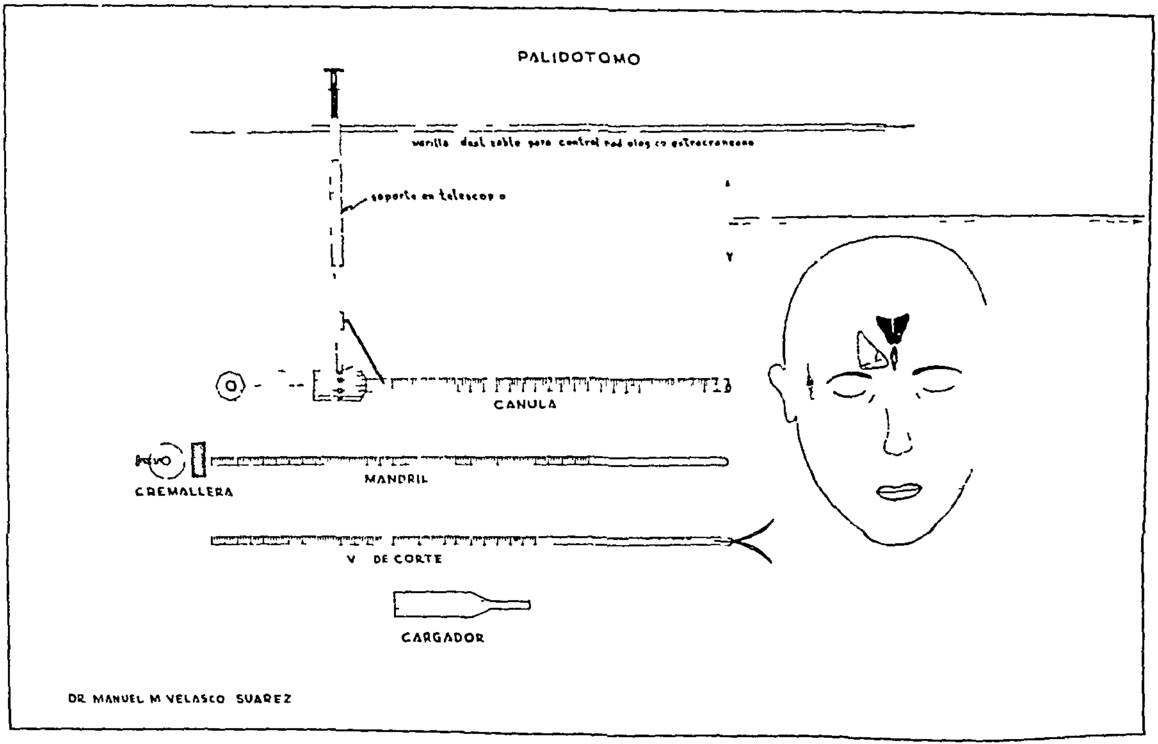
PALIDOTOMO
varilla deslizable para control radiologico extracraneano
soporte en telescopio
CANULA
CREMALLERA
MANDRIL
V DE CORTE
CARGADOR
DR. MANUEL M VELASCO SUAREZ

Fig. 1.

El *Pallidum,* que en el recién nacido es el centro primitivo del automatismo incoordinado, se convierte en el adulto en el centro de las sinergias motoras, de grupos musculares individualizados y de grandes o pequeños segmentos de las extremidades. Controla no sólo la regulación sinérgica que sobre el sistema motor ejercen los centros autonómicos del cerebelo y tronco cerebral, sino también aquellos actos motores automáticos para los que el estriatum es un importante moderador. Esta cooperación funcional y el importante papel que juega el pallidum en el mecanismo de la regulación del tono, ha constituido uno de los factores para que en los temblores y desórdenes de movimiento se le suponga al globus pallidus una actividad facilitadora del trastorno motor, convirtiéndose por hoy en uno de los atractivos quirúrgicos para controlar algunas disquinesias.

El *cuerpo de Luys* seria el centro sinérgico de la coordinación cerebelosa.

La *substancia negra* es considerada como un centro de control del tono estático y un regulador en el órden de los movimientos sucesivos. (La problemática significación de la melanina en esta estructura ganglionar quizás encierre alguno de los secretos relacionados con ciertos aspectos de las disquinesias.)

Por fin, recordemos que la integración funcional del *sistema extrapiramidal,* depende de la integridad funcional del cerebelo, cerebro medio, tronco cerebral, tálamo y corteza.

El *cerebelo,* con sus núcleos y conexiones estabiliza por entero el sistema de la coordinación corporal y lleva a la corteza cerebral la información de los cambios que ocurren en la posición del cuerpo y en el tono de la musculatura corporal. Esta "información" es llevada por el sistema rubro-dentado (dentorubro) al tálamo y, de aquí, a la corteza cerebral y a los centros extrapiramidales. Las funciones optimas de este sistema se alcanzan sólo cuando el tálamo es un centro activo como estación receptora de estímulos propioceptivos y exteroceptivos. Es un órgano relacionado necesariamente con el tono afectivo que informa al individuo no sólo de los más discretos cambios somáticos, sino también de su relación con el mundo exterior y sus conexiones con la corteza cerebral son de la mayor significación para la conciencia de la sensibilidad somestésica y del acto motor; con el hipotálamo encuentra también significación fisiológica en la regulación central del tono muscular.

La fisiología patológica de los desórdenes motores que nos ocupan se manifestará clínicamente por aquinesia, hipoquinesia, alteraciones del tono muscular, hiperquinesia,—temblor, sacudidas, movimientos distónicos y combinaciones de varios de estos fenómenos, cuya explicación sujeta a revisiones, podrá justificar el ataque quirúrgico de una o varias de las estructuras mencionadas.

Desde principios de este siglo se han hecho intentos operatorios para corregir el temblor y los movimientos involuntarios de los miembros, algunos con resultados estimulantes, otros son resultados absolutamente nulos; pero, la realidad actual ha comprobado que desde que Spiegel y Wycis (1947) abordaron el blobus pallidus por métodos esterotáxicos, estimularon la búsqueda de procedimientos más sencillos para atacar este núcleo en la práctica neurológica para controlar algunas disquinesias.

Sin olvidar el valor inicial de los trabajos de Meyers (1942) quien interrumpió las vías palidales al través de una operación transventricular que logró modificar el temblor, creemos que han sido Fenelón, Guiot, Narabayashi y Okuma (1953) y Cooper y Poloukhine (1954-55), los que han trabajado con inyecciones de novocaína o alcohol o electrocoagulación sobre las estructuras del pallidus, deseando controlar principalmente el temblor parkinsoniano.

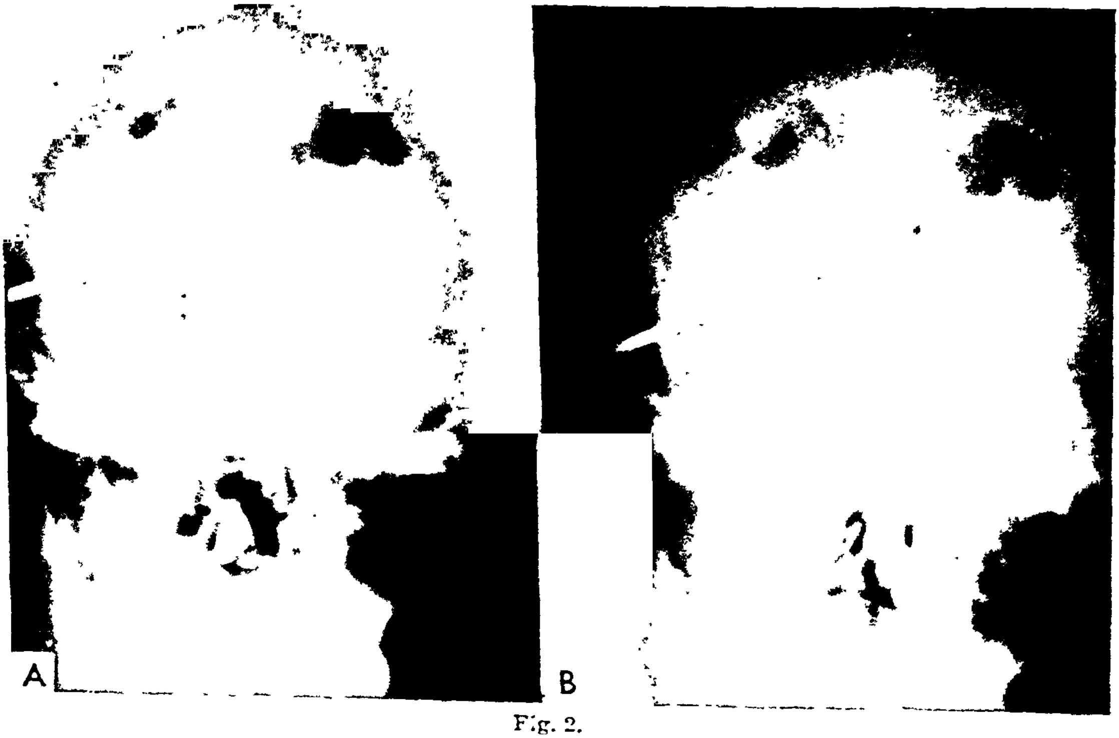

Fig. 2.

Después de hacer algunos intentos de novocainización y alcoholización señalados también por Fairman y Givré sobre el globus pallidus, con resultados fugaces, o alentadores pero no sin compromiso de difusión para la cápsula interna y otras estructuras de vecindad, resolvimos practicar la sección del globus pallidus, de acuerdo con las medidas estereotáxicas de Spiegel y Wycis, y tomando también en consideración las referencias de Cooper.

Nos pareció entonces que el plano frontal más aceptables que uno debe buscar para atacar el globus palidus, es aquel que señalan Spiegel y Wycis a 30 mms. por delante de la glándula pineal y el plano horizontal que pasa a 5 mm. por arriba de la comisura anterior en el atlas de los mismos autores (Figs. 29 y 69) ; pero ante la imposibilidad de contar siempre con la glándula pineal calcificada y visible a los rayos X, la búsqueda de la masa intermedia hacia el centro de la imágen pneumográfica del III ventrículo nos ha facilitado este propósito.

Hemos encontrado que un trépano temporal practicado a 4 cms. por detrás del arco orbitario externo y a 3 cms. por encima del cigoma, permite el acceso de una cánula al través del giro temporal superior, pasando por la parte inferior de la ínsula en dirección de la porción media de la imágen del III ventrículo, logra alcanzar el globus pallidus en un mesocéfalo a 5 cms. de la corteza cerebral y a 1 cm. de la linea media.

La cánula adaptada primero de un leucotomo de Freeman y Watts y después diseñada especialmente por nosotros (Fig. 1) permite substituir su mandrín romo por otro que lleva en la punta una muelle doble que se abre al terminar la canula en forma de abanico cuya abertura puede graduarse desde afuera insertándola más o menos de 0.5 a 1 cm. en cada brazo u hoja de la muelle.

La intervención se practica siempre bajo anestesia local y una vez insertada la canula se controla su posición por una radiografía anteroposterior y otra lateral (Fig. 2, *A* and *B*) escogiendo un plano coronal, a 14 cms. por arriba del nasion, que señalamos con una "diadema" de plástico lucite perforado a distintas alturas pero con una referencia especial para el trépano señalado y, en el lado opuesto, a 11 cms. de la linea media aplicamos un clip de plata en cuero cabelludo que nos servirá de orientación en el avance de la cánula. Cuando consideramos que el instrumento está en su posición y profundidad correctas, comprobamos cuidadosamente la no existencia de hemorragia y realizamos la exploración de la capacidad motora en los miembros contralaterales ya que la lesión de la cápsula internal podría ser responsable desde luego de disminución de la fuerza muscular. Ante la mayor seguridad posible de tener la punta de nuestra cánula en el espesor mismo del globus pallidus (probablemente en la emergencia inferior de las fibrillas palidofugales) inyectamos 0.5 cc de una solución de novocaína al 1.5% ; si logramos de una manera impresionanate la disminución del temblor, hacemos pasar por la cánula el instrumento que con sus muelles cortantes se abrirá en el extremo (ahora en el pálido) de la misma, medio centímetro para realizar el primer corte por el movimiento rotatorio del instrumento y, de no conseguir con este corte la cesación de los movimientos, hacemos protruir medio centímetro más las muelles que, por nuevos movimientos de rotación del instrumento ampliarán al doble el plano de sección en el aspecto anteroposterior del globus pallidus.

En uno de nuestros casos bastó la simple inserción de la cánula llevada hasta el lugar señalado, para suspender espectacularmente el temblor en un hemiparkinsonismo.

En otro de nuestros pacientes, la novocaína inyectada y aun el alcohol regresaban por la cánula como por encontrar estructuras tan endurecidas (marmóreas) que no permitían la infiltración de estos líquidos. El corte en este paciente nos dió la sensación de dureza y discreta crepitación con la disminución consecutiva inmediata del temblor.

Con objeto de tener la mayor seguridad posible, respecto de la posición de la punta de nuestra cánula en el globus pallidus y de la profundidad que habrán de alcanzar las muelles cortantes, antes de practicar el corte usamos un electrodo de profundidad, cuya punta esférica no aislada se pasa de 0.5 a 1 cm. de la profundidad alcanzada por la cánula, hacemos un registro electroencefalográfico, cuyas ondas lentas (una a tres por segundo) nos han parecido características del trazado de actividad del ganglio basal, que no logramos cuando el electrodo está en cápsula interna.

A mayor abundamiento, antes de retirar el electrodo lo usamos también para estimulación eléctrica con la onda cuadrada daba un cronaxímetro, de 0.5 a 5 voltios con frecuencias de medio segundo con duración de D. I sig. — Si se obtienen respuestas motoras rítmicas contralaterales en ambos miembros, por estímulo sobre la cápsula interna, retiramos aproximadamente de ¼ a ½ cm. la cánula con el electrodo, hasta no obtener esta respuesta y es entonces cuando inyectamos de ½ a 1 cc. de novocaína al 1.5%. Si el temblor cede, practicamos el corte y retirado el instrumento cortante dejamos la cánula en su sitio 2 a 3 minutos con objeto de comprobar si hay o no hemorragia; enseguida retiramos lentamente la cánula—En algunos de nuestros casos, como escurriera sangre, inyectamos 2.5 cc. de suero fisiológico en varias ocasiones hasta que el suero regresó por la cánula menos teñido.

Es importante controlar la fuerza muscular y capacidad de movimientos durante la realización del corte (Hemos observado que se frecuente que aparezca un signo de Babinski inmadiatamente después de la operación y muy discreta paresia que desaparece en las primeras 24 hs.).

CONCLUSIONES

Nuestra casuística de sólo 5 casos nos ha enseñado que el procedimiento no deja de tener riesgos particularmente para la capacidad motora integral de los miembros contralaterales, principalmente para el miembro inferior. En uno de nuestros casos hemos tenido que lamentar una monoparesia inferior que no ha regresado en 5 meses; en los 4 casos restantes hamos observado la aparición del signo de Babinski y hemiparesia transitoria. Uno de nuestros casos no parkinsoniano, con hemibalismo severo consecutivo a un accidente vascular hipertensivo, se benefició espectacularmente con la intervención, pero los movimientos para el miembro superior volvieron a aparecer al tercer día de la operación, aun cuando con menos intensidad; un segundo intento operatorio — sin previo registro electrográfico ni estímulo, produjo hemiparesia contralateral transitoria y estupor y un cuadro confusional de 8 días de duración, al cabo de los cuales la paciente estuvo libre de movimientos desordenados pero con hemiparesia que, a medida que iba cediendo, dejaba su lugar a los movimientos involuntarios. 21 días después, su hemibalismo vuelve a estar presente y como prefiere la paresia previa a los movimientos desordenados, resolvemos hacer quimopalidolisis usando 1 cc. de alcohol absoluto con fenol al 1%. Inmadiatamente de inyectada la substancia ceden los movimientos, hay hemiparesia progresiva que se convierte en hemiplegia media hora después. La enferma se queja de cefalea intensa. Ocho horas después se hace PL encontrando tensión inicial de 100 mm (Raq. de agua). En las siguientes 24 hs. la enferma dice sentirse mejor pero está manifiestamente confusa y con tendencia al sopor. Cuarenta y ocho horas después, se inicia un estado semicomatoso que termina con el fallecimiento de la enferma al cuarto día de la inyección.

En nuestro primer enfermo, un adulto de 67 años, escogido para esta intervención que hemos descrito, el temblor parkinsoniano en el hemicuerpo izquierdo cedió instantáneamente cuando la cánula estuvo a la profundidad en que suponíamos encontrar el globus pallidus y, sin corte mayor, el enfermo estuvo libre de su disquinesia hasta 26 días después en que desgraciadamente falleció por un proceso neumónico.—La autopsia en este caso nos comprobó la lesión del globus pallidus en su porción más inferior.

En los otros dos casos hemos obtenido la cesación inmediata y espectacular del temblor con ligerísima hemiparesia que ha regresado totalmente en 48 o 72 hs.

En todos nuestros casos hemos observado muy considerable disminución y casi desaparición de la rigidez postural y de movimiento.

No han ocurrido trastornos del lenguaje, pero sí hemos observado cierta tendencia a la vervigeración en las 24 hs. consecutivas a la intervención.

Trastornos del sueño con somnolencia y estupor en dos de nuestros casos y en uno de ellos insomnio de 24 hs. a pesar de hipnóticos y ataráxicos.

Hasta la fecha hemos escogido pacientes que requieren intervención de un solo lado.

Creemos que de practicarse la operación en ambos lados debe dejarse transcurrir un mes o más para la realización de la segunda.

Los mejores resultados los hemos obtenido en el control del temblor.

En el caso hemibalismo descrito, creemos que la disquinesia fué substituida por hemiparesia a causa de lesión de la cápsula interna y que el accidente fatal por la inyección de alcohol-fenol se debió a la difusión del mismo de la vecindad de estructuras diencefálicas.

Creemos que la palidotomía constituye una esperanza segura en el tratamiento sintomático de algunas disquinesias, sin afectar la movilidad voluntaria y reduciendo considerablemente el temblor.

NOTA.—En el control de nuestros enfermos, además de todas las pruebas clínicas, hacemos trazos electromiográficos y cinematográficos pre y post operatorios.

Nuestra experiencia con esta intervención es de 13 meses y hemos podido comprobar que si hay esbozo de temblor nunca representa más del 10% del preoperatorio y que nuestros pacientes han estado siempre satisfechos de los resultados obtenidos.

Nos complace saber que el Dr. Obrador en Madrid, realiza una intervención semejante. A los casos señalados podemos ya agregar el de otra enferma recientemente operada, con temblor parkinsoniano, postencefalítico bilateral, de más de 20 años de evolución en la que hemos operado sobre el lado derecho controlando de inmediato el temblor contralateral izquierdo.

Con objeto de tener mejor control del área lesionada en el pallidum, últimamente estamos dejando la mitad de un clip de plata de Mackensie, antes de retirar la cánula.

Adendum: Cuando esta comunicación se publica (Feb., 1959) el autor ha operado a 31 enfermos afectados de Parkinsonismo uni o bilateral, con espectacular mejoria en el 70%, beneficio aceptable en el 20%, mejoria fugäz y recidiva temprana en 5% y complicaciones incapacitantes y mortales en 5%. En dos pacientes más con disquinesia coreiforme y severo hemibalismo los resultados no han sido muy satisfactorios. En estos se ha intentado tambien el ataque quirurgico, con el mismo instrumental, del nucleo rojo y del nucleo v.l. del tálamo.

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Most of us are so familiar with the dangers of delay in acute surgical conditions. that we run very little risk of falling into the error of procrastination. We have been taught to recognize the emergency that requires prompt action. to make our decisions quickly. and to carry them out expeditiously. It is not often. however. that we allow our minds to dwell on the reverse side of the picture. the advantage of delay. Yet it cannot be too strongly insisted that the first point a surgeon should consider is whether any operation is required at all. whether "do nothing" is not the best advice in the interest of the patient. Operating has become so easy. and its implements and procedures so standardized. that most men when they leave hospital are quite capable of performing a large number of operations safely and well at a time when their surgical judgment is yet immature. With experience, the responsibility for deciding whether operation is the best form of treatment comes to assume first place: the choice of operation becomes a subsidiary question.

The last twenty years have seen many diseases and many parts of the body. which were formerly immune from surgical interference. brought within the scope of operation. They have also witnessed a general reconsideration of values. It has been realized that in many conditions. where treatment by operation was formerly the rule. the resulting advantage which accrues to the patient is not enough to counterbalance the pain and the risk.

—*Ogilvie*

Editorial

The History of Anesthesia

The Early Days

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During the forthcoming months of 1959 and as long thereafter as possible, the editorial pages of the Journal of the International College of Surgeons *will be occupied by presentations of rare and extraordinary historic value, the lectures presented at the International Surgeons' Hall of Fame on medical and surgical history from the earliest recorded achievements to those of our own times. We believe that Journal readers who were not able to attend the lectures will find them as exciting as did the audiences present at their delivery. The story of progress in the healing arts and the giants of medicine and surgery to whom we owe the amazing brilliance and scope of modern achievement is intrinsically thrilling and is a vital part of the education of every cultivated man and woman, inside or outside the profession. It is altogether fitting that it should appear in these pages, since the International College of Surgeons is first, last and always a teaching institution.*

WITH THE eating of the apple from the Tree of Life, man began to accumulate knowledge to relieve the pain that besieged him. This knowledge, however, was woefully inadequate. Though many old stories of ancient times tell us of many potion brews and inhalants, and of many drugs, each when carefully studied shows that though a few may have blunted pain to some slight extent, none was adequate to relieve severe pain. Some, especially those concocted with wine or similar spirits, may have produced sleep or some degree of stupor, yet none was adequate for surgical anesthesia, nor could any of them have been used repeatedly without danger of poisoning. By far the majority of these portions have been studied and found devoid of any real analgesic effects.

One of the early attempts to produce analgesia was made by the Assyrians, who advocated compressing the carotid arteries for the production of unconsciousness. As herbs were investigated, the soporific properties of opium and hemp were used in India. These two drugs were analgesics, but not anesthetic without danger of poisoning. Pliny the Elder, in 79 A.D., described the use of mandragora. Later the Greek physicians combined mandragora with wine and called it morion. Though this drug was the subject of many papers and the essence of many remedies of the Middle Ages, it is devoid of real analgesic properties.

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The earliest references to inhalation anesthesia was contained in the works of Herodotus. He described the burning of a peculiar kind of hemp, resembling hasheesh, and the inhalation of these fumes. In ancient times the fumes of several hypnotic sponges were inhaled. Hugh of Lucca, in the thirteenth century, described many such soporific sponges made with opioids. Even Guy de Chauliac, whose textbook ranked first in the Middle Ages, recommended the inhalation of narcotics. Needless to say, none was effective, except that the vehicle may have been volatile and caused some psychic depression, especially if such a substance as alcohol was employed.

Other physical attempts to alleviate pain include the use of snow and ice, applied locally. This was recommended by Avicenna (979 to 1030 A.D.). James Moore, a famous English surgeon, published a monograph in 1784 entitled "A Method of Preventing or Diminishing Pain in Several Operations of Trunk Surgery." This method consisted of the use of clamplike devices applied to the nerve trunk areas of the extremity upon which the operation was being performed.

In 1779 Frederick A. Mesmer introduced the art of hypnosis, which became known as "messmerism." He believed that the body had an "animal magnetism" and that this could be controlled, to the alleviation of pain. In the British Isles James Esdaile, John Elliotson and James Byrd carried on the mesmeric technic, and, though some operations were performed with the aid of hypnosis administered by Esdaile, this technic never acquired a large group of supporters.

The age of modern inhalants began in 1540, when Valerius Cordius, a German, described the properties of sweet vitriol. Paracelsus, in the same country, even hinted at its use. In 1730 Frobonius renamed diethyl, calling it "ether." Prior to this time it was known as sweet vitriol. The word "ether" is derived from the Greek "aithër" through the Latin "aether," both words meaning "air."

One of the earliest contributors to modern inhalation anesthesia was Joseph Priestly. He was born near Leeds, England, of strict Calvinistic parents. His educational training was intended to equip him for the ministry. At the age of twenty-two he became a minister and a teacher of languages. After meeting Benjamin Franklin in London, his interest in chemistry was spurred. He then built a laboratory and embarked on research. He was enchanted by the gas that bubbled from the beer baths that were located near his church. This was found to be the same gas that was prepared by Joseph—carbon dioxide.

In 1772, while in his laboratory at Calne, he treated damped iron filings with nitrous acid, and upon heating them found nitrous oxide. He had to leave England because of his religious beliefs, and fled to Northern Giland, Pennsylvania. He also isolated oxygen, and is considered the father of modern anesthesia because of these important basic discoveries.

The application of inhalants for the alleviation of pain was undoubtedly aided by the work of Sir Humphrey Davy. He was born of poor parents in England, and was "discovered" in Penzance about 1797. Later he became the superintendent of the institution at Clifton, which was a stepping-stone to his becoming the head of Beddows Pneumatic Institute, the important seat of learning and treatment of his day.

In April 1799 Davy began inhaling nitrous oxide which was considered a poison by many, and this took this gas out of the class of "contagions." (Portraits of Davy and Beddows in *Triumph Over Pain,* pp. 80-81.) Davy wrote about the intensification of auditory and visual reception in the analgesic state produced with nitrous oxide without loss of consciousness. In 1801 Davy resigned the post of superintendent of the Pneumatic Institute and became a lecturer in chemistry and director of the Chemical Laboratory at the Royal Institute. Unfortunately, Davy did not perfect the surgical use of nitrous oxide, although he did suggest that it might prove useful for this purpose.

Henry Hill Hickman (portrait in *Triumph Over Pain*, p. 112) was born on Jan. 27, 1800, in a Shropshire village. He was among the first to describe and recommend the production of the anesthetic state of unconsciousness. At the age of twenty, after much study, he became a member of both the Royal College of Surgeons and the Royal Medical Society of Asbury. On Feb. 21, 1824, he wrote his famous letter to Mr. T. A. Knight of Downton Castle near Ludlow, a prominent member of the Royal Society. In this letter he recommended using carbonic acid gas in surgical practice, and described his experiments on animals. In Hickman's opinion these animals were not asphyxiated, but were really in a state of suspended animation. Although Mr. Knight seems to have encouraged Hickman to publish his letters and experiences in the form of a pamphlet, he made no attempt to convince his colleagues of the Royal Society of its importance. After waiting three years, Hickman, in April 1838, decided to present his case to Charles, King of France. His letter of Aug. 31, 1838, was forwarded to the Royal Academy of Medicine and was read at a meeting of the Medical Section on September 28. A committee was appointed to study Hickman's claims, but nothing was done about it. Hickman returned to England, and a short time later, on April 5, 1830, died at the age of 30. He was buried at Burnsfield. Hickman's experiments on animals are undoubtedly among the first successful uses of anesthesia for surgical operations on animals. His works were carefully documented and presented. It is sad that his choice of an agent was carbon dioxide, and also that no one followed his lead to its logical conclusion by applying a modification of his technic to man.

Demonstrations of nitrous oxide inhalation were very common during the early nineteenth century. One of the lecturers of that era was Gardner Quincy Colton, whose early demonstrations set the stage for Wells' discovery of the anesthetic properties of the gas.

Gardner Quincy Colton was born in Vermont in 1814. Because of monetary embarrassment, he had to leave school and become an apprentice chairmaker. Later, he came to continue his trade in New York, where his brother aided him in entering the College of Physicians and Surgeons in 1842. He left school two years later, because of financial difficulties, and became a public lecturer. On Dec. 10, 1844, while Colton was in Hartford, Connecticut, one of the participants of his nitrous oxide inhaling exhibitions sustained a contusion hematoma and felt no pain. Wells, being present at the demonstration, was impressed and decided to try the use of nitrous oxide in his practice.

During the "Gold Rush" in 1849, Colton became attracted to the West. In California he became a Justice of the Peace. In later years Colton became a wealthy man. Unfortunately, after his return to the East his wealth disappeared, and in 1863 he began administering nitrous oxide again.

While Colton was on tour he met J. H. Smith, a dentist from New Haven, Connecticut, and served as his anesthetist for the demonstration of nitrous oxide. Colton opened the first office of the Colton Dental

Association in New York City, employing Dr. John Allen as dentist. Colton's fame and fortune as a painless extractor of teeth grew fabulously and he became wealthy again.

Horace Wells (portrait in *Triumph Over Pain,* p. 126) was born on Jan. 21, 1815, at Hartford, in Windsor County, Vermont. He descended from an aristocratic New England stock and consequently was able to attend many famous private schools. He studied dentistry in Boston and in 1834, at the age of 19, began his predental study. After studying two years he moved to Hartford and built a lucrative practice. He discussed the possibility of preventing surgical pain with colleagues on several occasions.

During the years from 1841 to 1843 he had several students, among whom were John M. Riggs and William T. G. Morton. On Dec. 10, 1844, he witnessed Colton's demonstration of nitrous oxide and was impressed. The next day he requested John M. Riggs, dentist, to extract one of his molars while he, Wells, was under the influence of nitrous oxide. After administering it in turn to many dental patients, he approached Dr. Warren of Massachusetts General Hospital and requested an opportunity to demonstrate its uses by administering surgical anesthesia. Unfortunately, this demonstration failed because of inadequate depth of the anesthesia. Although the patient had no memory of the painful episode and really was in an analgesic plane, the audience, because of his outcry, came to the conclusion that the demonstration was a failure.

Nevertheless, there can be little doubt that this man played an important role in the discovery of surgical anesthesia. The fact that Morton saw his teacher, Wells, anesthetize a patient for extraction cannot be denied. That he induced anesthesia for many extractions and taught his art to many also cannot be denied. That he had his own tooth extracted first is not to be denied. There would have been no debate about priority had his public demonstration of nitrous oxide been successful, and it could have been successful had more premedication or deeper anesthesia been utilized. Surgical anesthesia in its strictest sense was given to the world by Morton; but anesthesia for dentistry, at least, was given to the world by Wells, and in about 1862 was again popularized by Colton.

Crawford Williamson Long (portrait in *Triumph Over Pain,* p. 15) was born on Nov. 1, 1815, in Danielsville, Georgia. Although Crawford Williamson Long was the earliest well-known documented user of ether for the alleviation of pain, his failure to publicize his work kept the importance thereof from being fully recognized. Long first entered Franklin College at Athens, Georgia. He read medicine under Dr. George Grant of Jefferson, Georgia. Later, in 1836, he matriculated with the medical department of Transylvania University at Lexington, Kentucky, and in 1838 transferred to the University of Pennsylvania, where he first learned of ether. In 1838 and 1839 he observed the effects of ether at first hand, on some of his colleagues who were inhaling it for amusement. In 1839 he spent eighteen months "walking" the hospitals of New York. In 1841, when he had completed his studies, he went back to Georgia and located in Jefferson. Jefferson, like many small towns in the United States, was a site of ether frolics, and one of Long's student friends, James V. Venerable, had frequented many such frolics. While under the influence of ether he sustained injuries without suffering pain. Long convinced Mr. Venerable that he should have two small tumors on the nape of the neck excised while under ether anesthesia, and he probably would not feel any pain. At first Venerable disapproved, but later was convinced and on March 30, 1842, Paris was the seat of learning for the world at the time. Soon after Jackson had sent his testimonials to Beaumont, Dr. Bigelow, who was champion of Morton's claim to priority in etherization, made before the Boston Academy of Arts and Sciences and the Boston Society of Medical Improvement a report on the recent painless operations. On November 18, Bigelow's address was published in a Boston medical journal. Jackson got wind of this and hurriedly wrote to Dr. Beaumont, asking that his letter be read before the Academy of Sciences. On Monday, Jan. 18, 1847, the Academy of Sciences met in Paris. Such leading authorities as Velpeau, Rouson and Serres were present. At this meeting Dr. Beaumont read a long report from Dr. Charles Jackson, dated 13 Nov. 1846, in which Jackson claimed that he was the discoverer of etherization and that Morton was merely a Boston dentist whom Jackson had commissioned to try his discovery for the extraction of teeth and operations later given at the Massachusetts General Hospital. Velpeau stated his belief that Morton was the original discoverer, and the Academy of Sciences appointed a special committee to investigate the claim. Morton received news that Jackson had tried to discredit him at the Academy of Sciences, and approached Jackson on this subject. Jackson tried to reassure him saying that this was an error; but nevertheless, he continued to press his claims and even published them in the Daily Advertiser before Morton could do so. Fortunately, the members of the Massachusetts General Hospital were on Morton's side and subsequently aided his claim to the discovery. Dr. John C. Warren, in his book *On Etherization, with Surgical Remarks* published by William Ticknor and Company, 1847, described the famous operation of Oct. 16, 1846, in which a tumor on the left side of the neck, lying parallel to and just below the left lower jaw, had been excised. Warren's book also discussed the description of etherization, including the cough, the deep inspiration and the audible, quickening pulse, which later became slower. Warren also described the postoperative nausea and vomiting, the relaxation of the muscles and the dilatation of the pupils. He expressed the opinion that the ill effects of ether were due to the exclusion of oxygen in the excessive amounts of ether given. Warren also discussed many operations performed at this time, and the results of etherization.

Warren's book only reflected greater importance in the claims of Morton. On March 18, 1848, Morton published a statement in English in Little's *Living Age*, laying claim to the discovery of etherization, and this was supplemented by many affidavits. Jackson's only public contact with etherization really occurred on Nov. 21, 1846, when Morton demonstrated the use of ether in the Bromfields' house to a group of doctors. As the year 1852 came to a close, the report on the Institute of France, of which the Academy of Science was a member section, agreed that their prize for etherization should be shared between Dr. Jackson and Dr. Morton. Therefore, 2,500 francs was sent to each man. Subsequently Morton refused the prize from the Montyon Commission, which stunned the donors. In order to show their appreciation, the Institute of France decided that the rejected 2,500 francs should be used for a gold medal to be given to Morton, and this was issued and accepted with great pride.

Meanwhile, Jackson's hatred for Morton was spurred by the Institute's latest action. On Nov. 12, 1846, Morton received a document from Mr. Bachanan, Secretary of State. This document, numbered 4848, gave exclusive rights to the licensed for the use of Morton's inhaler for ether. It was Morton's original intention to charge the doctors for the use of the inhaler depending upon the size of each one's practice in the town in which he practiced. In May 1846, however, war with Mexico was raging, and Morton offered to supply inhalers gratis to Army authorities, and to instruct Army surgeons in its use. Jackson, realizing that no profit could be made with so many free inhalers available, decided to give up his claim to the inhaler.

Meanwhile Jackson had incited many of Morton's creditors to foreclose and had forced Morton into bankruptcy. On March 4, 1849, Zachary Taylor became President of the United States. Since the Government had infringed on Morton's patent, it was decided that a National grant be given to Morton. Morton was told to submit a petition to Congress, which was ignored for at least two years. During this time, Morton's financial needs became extremely pressing. The members of the Boston Medical Society collected several thousand dollars and presented it to Morton in recognition of his discovery. Congress then decided to allocate a sum of $100,000 to the discoverer of anesthesia, which spurred Jackson's claim to this discovery. After many years, Morton despondently retired to his home in West Needham, Connecticut, and took up dairy farming. Communications from Washington called him back there to restate his claim before Congress. Since Morton felt that his life would not have been fulfilled without the justification of his claims, he accepted. In 1853 Franklin Pearce, a Democratic president of the United States, stated that Morton should have been reimbursed. Unfortunately, all profits of his little farm at West Needham had been enough to enable Morton to keep his wife and children out of debt and Morton began borrowing money again. He was forced to sell the farm. On July 15, 1868, William Thomas Lee Morton, a benefactor of mankind, died at the age of 42 years in poverty and dejection. His wife and five fatherless children were left unprovided for. It was many years later that Congress awarded Morton's heirs the sum of money allocated for his discovery.

Although Charles P. Jackson (portrait in *Triumph Over Pain,* p. 224) received no credit for the discovery of anesthesia, he is without a doubt an important contributor to its history. Jackson received his M.D. at Harvard in 1829. He studied for three years in France, and later was employed in the United States as an analytic chemist. Having studied in a Royal School of Mines in France, Jackson claimed that he inhaled the ether for inflamed mucous membranes after he had accidentally inhaled chlorine gas in 1841. He described the anesthetic state and then conducted experiments and he related some of these facts to friends. Jackson stated that he too was busy planning expeditions in the further pursuance of ether's effects and the proclamation of its merits. Jackson claimed that he had told Morton to use purified sulphuric ether in his experiments, and even that he should get the apparatus for its proper use from Burnette, a Boston pharmacist.

On Oct. 21, 1846, Petty, a friend of Morton's, suggested that the use of ether should be patented. Jackson, having heard of Morton's claim, suggested that he be reimbursed for giving the advice to Morton, but later, on October 23rd, suggested that he should be entitled to a percentage of the profits. Later Jackson, perturbed by the lack of profits during the war and other affairs, destroyed the patent that he and Morton had obtained. On Nov. 13, 1846, Jackson wrote to Beaumont, who was in Paris, telling him about the discovery of ether and stating that Morton was his agent. Jackson also wrote to many of the other learned men of the world to establish his claim to ether before Morton could. This later led to decisions involving many prizes and honors that were awarded to him. After a long, turbulent fight with Morton, which was being carried out by the Congress of the United States, Jackson died in 1880, 75 years old and insane.

One of the great pioneers in obstetric anesthesia was James Young Simpson (portrait in *Triumph Over Pain,* p. 272). Simpson was born poor, the son of a baker. He became a doctor and subsequently received an employment as chief assistant to the lying-in ward at Edinburgh Infirmary. He had spent years looking for a method of painless delivery, and, in December 1846, he received the news from London that Liston had performed a painless operation under ether. Simpson had decided to use it on "laboring women." The only disconcerting thing that occurred was that the women became giddy and nauseated, and vomited.

Simpson decided to use an agent called chloroform, which had been discovered in 1841, sixteen years earlier, in Bromfield, Massachusetts, by an American army sergeant named Samuel Guthrie. Although a French chemist named Souberian correctly worked out the formula and named it chloroform, and Lieberg, a German, had also worked out the method of chloroform production at approximately the same time that Samuel Guthrie did, Simpson first used chloroform at a party of several friends, as an after-dinner entertainment. It was then that Simpson noted its anesthetic properties and decided to use it in obstetrics. It was on Nov. 4, 1847, that Simpson first used it in a delivery. Six days later Simpson reported to the Edinburgh Surgical Society that 30 women had been painlessly delivered with the aid of chloroform.

Unfortunately, there were many people at this time who believed that childbirth should not be painless, and they harassed Simpson. Even the clergy rallied against him, and he had to continue his fight against them. It was not until April 1853 that Queen Victoria summoned Snow to anesthetize her for the delivery of a child (Prince Leopold). This action ended the controversy. Simpson was later appointed as one of Her Majesty's physicians and in 1866 was made a baron. At the age of 24 he was elected president of the Royal Medical Society of Edinburgh, and in 1847 the queen appointed him as Physician in Ordinary of Scotland. Unlike his predecessors, he enjoyed many more honors and on May 6, 1870, he was buried in Westminster Abbey, and was later interred in Warristown Cemetery in Edinburgh.

John Snow was one of the earliest anesthesiologists in history. He investigated cholera and served during a cholera epidemic. His description of the source of the epidemic is a true classic. He wrote two classic texts; one on ether, the other on chloroform. These books are truly the work of a scientific genius. They were beautifully simple and accurate and to this day are informative. He tried to calculate the anesthetic dosage from the weight and amounts of anesthetics in blood in animals and convert this to man. He made an inhaler for anesthetics, delivering the agents at the correct temperature. He is mainly known for the administration of chloroform to Queen Victoria. He also tested ethyl chloride but, like many of the investigators at this time, disregarded it. He died in 1858 at the age of forty-five. There can be little doubt that he was the greatest of all early anesthesiologists.

The era of Carl Koller and local anesthesia begins with the use of cocaine. Cocaine was discovered by the Spanish conquerors of Peru, who found it in use among the

Indians. At first it was used only by the Peruvian priests, but later the Spaniards encouraged its general use, because it increased the work output of Indians who had it, and it was a good source of revenue. In 1859 A. Niemann, a pupil of Koller, isolated cocaine from the cocoa plant. In 1862, Prof. Schaeffer announced that cocaine applied to the tongue produced anesthesia. Sigmund Freud and Carl Koller had been working together. In 1884, Doctor Freud went to visit his fianceé, and while he was away Carl Koller, his assistant, started an experiment by placing cocaine in the eyes of guinea pigs, rabbits and dogs. Koller revealed then that he could scratch the cornea of the anesthetized animals with a pin without eliciting pain sensation. He even used electricity and cautery upon the anesthetized eyes of animals. Elated with his discovery, he published it and later became known as the discoverer of cocaine anesthesia.

Corning, a neurosurgeon of the nineteenth and twentieth centuries, had an accidental beginning with spinal anesthesia. He noted that, if strychnine was injected into the area around the cord, convulsions of the affected area were produced. He ascertained that if cocaine would produce local anesthesia of the eye it might have the same effect on the cord. Corning had a patient who had spinal weaknesses and seminal incontinence, and he decided to do the first spinal anesthesia on him. After waiting thirty minutes for the injection of a 3 per cent cocaine solution into the patient's spinal area, Corning administered a second dose and, although he was not in the field, spinal and epidural anesthesia appeared. Later other operations were performed with this technic and in 1886 a book entitled *Local Anesthesia in General Medicine and Surgery* was published by J. Leonard Corning, M.D. (Appleton and Company Press, New York).

Thus the stage was set for the development of technics for surgical anesthesia. Topical anesthesia had been discovered by Koller; epidural by Corning; infiltrative by Halstead; spinal by Quinchi, Bier, Hildebrant, Tuffies and Schluch.

Now names, technics and agents begin to appear as a result of the early work of these men. Chemists, pharmacologists and clinicians appear on the scene, and the history of anesthesia expands so that only an encyclopedic text could do justice to it.

The story of anesthesia is ultrasimplified here, for many who contributed could not be mentioned, and thus were necessarily slighted. This story emphasizes the role investigators from the United States played, but many early workers of Britain, France and Germany played important roles. Only by reading the early texts and papers as well as the various histories of anesthesia can one obtain the true picture.

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New Books

BOOKS RECEIVED

The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Pathology and Surgery of the Veins of the Lower Limbs. By Harold Dodd and Frank Cockett. Baltimore: The Williams & Wilkins Company, 1957. Pp. 462, illustrated.

Spinal Cord Compression. By I. M. Tarlov. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 147, with 41 illustrations.

Functional Bracing of the Upper Extremities. By Miles H. Anderson. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 463. Illustrated.

The Clinical Management of Varicose Veins. By David Woolfolk Barrow. New York: Paul B. Hoeber, 1957. Pp. 167, with 70 illustrations.

Homosexuality, Transvestism and Change of Sex. By Eugene de Savitsch. London: William Heinemann Medical Books Ltd., 1958. Pp. 120.

A Follow-Up Study of 128 Closed Head Injuries in Twins, Using Co-Twins as Controls. By S. J. Dencker. Copenhagen; Ejnar Muniksgaard, 1958. *Reviewed in this issue.*

Pseudarthrose Congénitale du Tibia et Son Traitement (Congenital Pseudarthrosis of the Tibia and Its Treatment). By M. Guilleminet and R. Ricard. Paris: Masson & Cie, 1958. Pp. 98, with 78 illustrations. *Reviewed in this issue.*

The Physician's Own Library. By Mary Louise Marshall. Springfield, Ill.; Charles C Thomas, Publisher, 1957. Pp. 80. *Reviewed in this issue.*

The Care of the Patient in Surgery, Including Techniques. By Edythe Louise Alexander. St. Louis: The C. V. Mosby Company, 1958. 3d edi. Pp. 840, with 555 illustrations. *Reviewed in this issue.*

Amino Acids and Peptides with Antimetabolic Activity. Edited by G. E. W. Wolstenholme and Cecilia M. O'Connor. Boston: Little, Brown and Company, 1958. Pp. 286. Illustrated. *Reviewed in this issue.*

Surgery in Infancy and Childhood. By Matthew White and Wallace M. Dennison. Edinburgh and London: E. & S. Livingstone, Ltd., 1958. Distributed in the United States by the Williams and Wilkins Company, Baltimore. Pp. 444, with 266 illustrations, some in color. *Reviewed in this issue.*

Milestones in Modern Surgery. Edited by Alfred Hurwitz and George A. Degenshein, with a foreword by J. Engelbert Dunphy. New York: Paul B. Hoeber, Inc., 1958. Pp. 520. Illustrated.

Neurological Basis of Behavior. (CIBA Foundation Symposium.) Edited by G. E. W. Wolstenholme and C. M. O'Connor. Boston: Little, Brown and Company, 1958. Pp. 400, with 109 illustrations.

Chirurgische Behandlung der Frischen Schâdelhirnverletzungen (Surgical Management of Recent Craniocerebral Injuries). Edited by W. Tönnis. Leipzig: Johann Ambrosius Barth, Publishers, 1959. Pp. 125, with 50 illustrations.

Thirteen papers, presented at the 1956 meeting of the Rhine-Westphalian Surgical Association, make up the contents of this informative booklet, the first of a series entitled *Contributions to Neurosurgery.*

Symptoms, diagnosis and therapy of various types of cranial and cerebral injuries, including their sequelae, are discussed, with due consideration of the literature.

Among the subjects dealt with are injuries of the frontobasal region, impression fractures, subdural hematomas, intracranial hemorrhages, traumatic arteriovenous aneurysms, cerebrovascular disturbances and cerebral fat embolism. The treatment of circulatory and respiratory complications is described, and the post-traumatic changes in blood volume and blood chemistry are outlined.

Case histories, illustrations, charts, angiograms, electroencephalograms, roentgenograms and ample references contribute to the value of this little book, which, mainly in German-speaking countries, will be of interest to neurosurgeons and those general surgeons who are frequently confronted with accidental head injuries.

ERNEST G. ABRAHAM, M.D.

Clinical Enzymology. Edited by Gustav J. Martin. Boston: Little, Brown and Company, 1958. Pp. 241.

This book offers a summary of present-day knowledge in a relatively new chapter of modern medicine. The first three chapters are devoted to theoretical considerations, while Chapters 4 and 5 discuss the practical aspects of the current knowledge of enzymes. Chapter 6 is again a more theoretical discussion; the final chapter is a recapitulation, with an outlook into the future.

The book is clearly written. It has an excellent bibliography, and the chapters dealing with the practical uses of knowledge are outstanding in clarity. The study of enzymology is just beginning, and many things that now seem established probably will change in future investigation.

This reviewer considers the book a valuable essay that should be read by anybody interested in the progress of medicine.

—WERNER F. EISENSTAEDT, M.D.

Surgery in Infancy and Childhood. By Matthew White and Wallace M. Dennison. Edinburgh and London: E. & S. Livingstone, Ltd., 1958. Distributed in the United States by the Williams and Wilkins Company, Baltimore. Pp. 444, with 266 illustrations, some in color.

Since the turn of the century pediatrics has become more and more important as a specialty, and surgery as related to infants and children a specialty within the field.

For twenty-five years the Royal Hospital for Sick Children in Glasgow has included in the final year's teaching of medical students a ten-week course on the problems of surgery in infancy and childhood. The work of the student at the bedside and in the outpatient department is supplemented by lectures and clinicopathologic demonstrations. This book is based on the lectures and demonstrations and was prepared to replace many of the lectures and allow the students more time for bedside teaching.

Since the text was designed for a specific situation, the authors warn the reader that it is not a book of reference for the pediatric surgeon. Nevertheless, in its practical presentation of everyday problems, the book is valuable to the practicing pediatrician and the general practitioner as well as to the medical student. The problems presented are familiar to all—birth accidents and malformations, accidents to which children are prone—foreign bodies in the alimentary tract; fractures, and the like. The book should have a wider distribution than the authors anticipated.

M. T.

Pseudarthrose Congénitale du Tibia et Son Traitement (Congenital Pseudarthrosis of the Tibia and Its Treatment). By M. Guilleminet and R. Ricard. Paris: Masson & Cie, 1958. Pp. 98, with 78 illustrations.

The authors present a critical study of the treatment of rare congenital pseudarthrosis of the tibia, based on a series of 14 cases. Their observations have increased current knowledge of the pathologic-anatoomic picture and of the treatment. No longer need we the surgeons rely on more or less haphazard methods. A carefully chosen reconstructive orthopedic operation and antibiotic therapy assure an ever-increasing number of successful results. The authors have had the opportunity to follow most of the 14 patients since birth, observing the development of bowing of the tibia and subsequent pseudarthrosis.

The greater part of this work is devoted to treatment. The authors do not minimize the many difficulties, i.e., imperfect consolidation, failure of bone union leading to late sequelae, such as recurrence of pseudarthrosis, which requires further treatment and, in some instances, amputation. They describe the surgical interventions employed on the basis of the various mechanical problems presented by the individual patient: the homogenous bone graft, the intermedullary nail of Kuntscher, the bridge or "bypass" graft and, in difficult cases, the Hahn or Huntington method, which combines tibial nailing with fibial osteoplasty. The ideal time for operation is between the ages of 3 and 4 years.

The clinical course of the 14 patients is tabulated as follows: 5 cures were obtained and the patients were well eighteen, eight, six, four, and two years after the operation; 3 patients operated on within the first year are progressing satisfactorily; in 2 there is consolidation with further sequelae; there were 3 failures (1 requiring amputation), and 1 patient did not return for follow-up.

The authors explain that the treatment of congenital pseudarthrosis still presents many problems that tax the surgeon's ingenuity, that treatment may be followed by disappointment and that results may not be lasting. These children must be kept under surveillance for a long time (the authors have had 1 patient under observation for twenty-one years). Patients presenting operative failure should not be abandoned. Reevaluation of the individual problem and the employment of a more suitable method of treatment may correct a poor result.

This book is not a general review of that rare condition, pseudarthrosis of the tibia. It consists of the critical analysis of 14 patients studied in detail, treated most intelligently and diligently followed. The pediatrician as well as the orthopedist will enhance his knowledge by reading this book, which is replete with detailed observations.

CHARLES PIERRE MATHÉ, M.D.

A Follow-Up Study of 128 Closed Head Injuries in Twins, Using Co-Twins as Controls. By S. J. Dencker. Copenhagen; Ejnar Muniksgaard, 1958.

The 128 head injuries studied in this report occurred in 117 pairs of twins, selected from 14,647 persons born between 1880 and 1946 and admitted to one of the hospitals in coma for head injury. Of these 117 pairs of twins, 36 were classified as monzygotic and 81 as dizygotic. The incidence of immediate postoperative complications in the injured persons was essentially the same in the monozygotic and dizygotic series.

Some cognitive functions deteriorated after closed head injury, although the impairment was subtle and of no practical importance. Late "postconcussional" symptoms were considered largely of constitutional origin, as the head-injured persons seemed to differ in pretraumatic mental makeup from the average subject. A larger number of head-injured persons in both the monzygotic and the dizygotic series were more antisocial than their twins. A great number of head-injured persons in the dizygotic group were of lower social status than their twins and about 20 per cent of all the twins with head injuries were more accident-prone than their partners.

HAROLD C. VORIS, M.D.

The Care of the Patient in Surgery, Including Techniques. By Edythe Louise Alexander. St. Louis: The C. V. Mosby Company, 1958. 3d edi. Pp. 840, with 555 illustrations.

This third edition of Alexander's *Care of The Patient in Surgery* is excellent. It is one of the few books devoted solely to the operating room and the procedures conducted therein.

Although the book is written primarily for the surgical nurse, it contains much of value for each member of the surgical team.

The writing is concise, and numerous drawings and photographs augment the text.

Cardiac and neurosurgical operations have been embellished over the previous editions. The author maintains a practical plane, however, and does not discuss the highly technical procedures involved in the bypassed mechanisms.

The surgical nurses I have encountered say Alexander is their best reference book. In my own opinion it has much to offer surgeon, nurse and technician. It can be recommended unreservedly.

—PHILIP THOREK, M.D.

Amino Acids and Peptides with Antimetabolic Activity. Edited by G. E. W. Wolstenholme and Cecilia M. O'Connor. Boston: Little, Brown and Company. 1958. Pp. 286. Illustrated.

This text is a record of the proceedings of the international symposium in March 1958 of the CIBA Foundation (London).

Twenty-nine participants engaged in the discussion, which dealt with the chemical, biochemical, biologic or clinical properties of amino acids and peptide derivatives.

The discussion is presented with very little editing, and the participants are recognized authorities.

The CIBA Foundation, an educational and scientific charity, was founded in 1947 for the promotion of international cooperation in medical and chemical research. It holds five or six symposiums a year, to which scientists are invited to meet informally for discussion. Each symposium draws visitors from many countries. The proceedings are published jointly by J. & A. Churchill, Ltd., of London, and Little, Brown and Co., of Boston. All of the proceedings are important to physicians and surgeons, because of the rapidly increasing developments in medicine.

—O. C.

The Physician's Own Library. By Mary Louise Marshall. Springfield: Charles C Thomas, Publisher, 1957. Pp. 80.

The doctor's personal library is often haphazardly collected, according to his personal interests (like anyone else's). But with the rapidity of recent advances in science, it is more and more important to plan a professional collection of books and magazines. Miss Marshall, medical librarian at Tulane University, has prepared a highly informative guide, with advice on budgeting, ordering, record keeping, preparing an index, etc. A chapter on the preparation of medical papers and a plan for pooling library resources in small communities are included. The book, originally a monograph in the American Lecture Series *(American Lectures in Internal Medicine)*, is edited by Dr. Roscoe L. Pullen, Professor of Medicine and Dean of the University of Missouri School of Medicine. It is a most valuable guide for the professional man.

M. T.

Abstracts from Current Literature

Survey of the German Literature on General and Orthopedic Surgery Since 1956

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Esophageal Surgery, 1956

HEINZ GRIESSMANN, M.D., F.I.C.S.
NEUMUENGER-HOLSTEIN

The increasing interest of the German surgeons in esophageal surgery is reflected by the increased number of papers in this field.

A review of the total field was given by Von Hasselvach (W156), who also emphasized the less satisfactory results of surgical treatment of esophageal varicosities, of the esophageal carcinoma and of the congenital atresia of the esophagus. The condition last mentioned, combined with esophageal tracheal fistula, is considered by Vogta to be connected with regressive development of the arteries of the region. He estimates the success of operative treatment at 42 per cent. Wassner, in a review of the literature reported on 142 esophagotracheobronchial fistulas, the causation, history and symptoms of which he discussed.

In Vosschulter's opinion, the prognosis of spontaneous perforation of the esophagus is favorable only if the condition is diagnosed early and actively tackled; Karchen favors a conservative treatment of this lesion. Vosschulter prefers the roentgen contrast examination to esophagoscopic study of this condition. From 1947 to 1953, 4 patients with perforation of the thoracic segment of the esophagus were admitted to the Heidelberg clinic. All of them were cured without surgical intervention. For this reason, Carter thinks that the results of conservative management are not worse than the results of operation. Moreover, with conservative therapy the patient would be spared the strain of a considerable operation.

Various papers dealing with cardiospasm. Griessmann differentiates the so-called cardiospasm from the idiopathic mega esophagus corresponding to the difference between Hirschsprung's disease and the idiopathic megacolon. The history of cardiospasm is usually brief, while in a case of mega-esophagus it may cover several decades. In the presence of cardio spasm, vomiting usually occurs immediately after a meal. A contradistinction with mega-esophagus it does not occur until several meals have been eaten and the filled esophagus merely overflows, showing none of the real characteristics of vomiting. With cardiospasm, inflammation is absent in most cases, whereas mega-esophagus almost regularly leads to esophagitis due to stagnation, and herein lies the danger of secondary carcinomatous degeneration. Roentgologically, cardiospasm shows a complete stop at the cardia and independent peristalsis of the esophagus. With mega-esophagus the cardial passage is free and peristalsis of the esophagus is absent.

Griessmann recommends cardiomyotomy for cardiospasm, according to Heller. He recommends his own method of "funneling" the lower segment of the esophagus. In order to do this he exposes the lower third of the organ transthoracically, and plicates the esophagus and wraps a collagen membrane around the organ.

Almor was first successful, with rabbits and dogs, in producing a passageable cardiospasm by exposing the cardia to low temperatures. The morphologic observations of the cardia and the esophagus made in these experiments are the same as those elicited in the early stages of this disease and thus supply a certain understanding of the pathogenesis. Almor explains the lesion by a local chronic lack of oxygen due to vascular contraction, leading to the death of ganglionic cells of Auerbach's plexus. The disease then extends to the next layers of the cardia, finally causing cardial sclerosis of the cardia as described by Wanke and Scheuttemayer.

Almor and Wanke reported the late results of esophagogastrostomy in the treatment of cardiospasm, after follow-up examinations of 17 patients. In every instance the complaints recurred sometime after the operation, i.e., esophagitis and gastritis. Regression of the esophageal dilatation was observed in 50 per cent. Heller states that stretching as well as cardiomyotomy is responsible for the fact that 70 per cent of the patients were free from symptoms. In contradistinction, the late results of operations on the sympathetic and vagal nerves are absolutely disappointing and have forced surgeons to abandon these methods. Almor and Wanke reject anastomosis also, because of the subsequent reflux esophagitis, particularly if the gastric juice shows normal acidity or hyperacidity. According to their experiments the severity of postoperative esophagitis depends upon the degree of acidity present; therefore they are convinced that in these cases only the Wangensteen operation is justified. Bauditz and Unger prefer the operation according to Heller. The exposure is transthoracic, and these authors consider it necessary to make long extramucosal incisions of the cardia. Their results are illustrated with roentgenograms. Bercholt, who has also presented an exhaustive report on this subject, considers the extramucosal cardiomyotomy of Heller the method of choice. He prefers the transthoracic approach, which makes a much more radical procedure possible. His opinion is based on 25 private cases of his own at the Zurich clinic.

Through the unfailing kindness and cooperation of Prof. Dr. K. Boshamer, F.I.C.S., we are able to make available to Journal readers the first section of a comprehensive outline of surgical progress in Germany since 1956. Prof. Heinz Griessmann of Neumeunger-Holstein summarizes the literature on esophageal surgery; Prof. Dr. Otto Kingreen, F.I.C.S., of Ludenscheid, that on traumatic surgery. Orthopedic surgery is presented by Prof. Dr. Hans Galli of Munich.

The literature from which the material was selected included all significant publications, whether periodical or in the form of books, monographs or Proceedings, to appear in Germany during the period chosen. The compilers have made an excellent selection and presented the facts concisely. The Journal warmly appreciates this timely and valuable contribution. To Prof. Boshamer, who by initiating the work has added another distinguished achievement to his long record of dedicated service to the College ideal of world-wide dissemination of the latest in surgical knowledge, we extend our sincere thanks and congratulations.

In Eisold's opinion, recurrence after treatment by stretching can be reduced by tearing the cardia at the moment of acute myotonus. He suggests, therefore, that the instruments be supplemented in such a way that at the moment of stretching sudden increase in the tonus of the cardia can be produced electrically, so that in each case actual tearing of the muscle can be accomplished. Kuehlmayer, Lorbeck and Wense express the opinion, on the basis of the literature and from observation of 25 private patients, that the significance of the acidity level a patient with reflux esophagitis is overestimated. They place their strongest emphasis on the pylorospasm caused by vagotomy, since pylorospasm inhibits the removal of the gastric secretion while, at the same time, the cardial mechanism is absent. Accordingly, they recommend pyloromyotomy as a prophylactic measure.

A thorough treatise on the surgical treatment of esophageal diverticulum is offered by Koele, who operated on 21 patients and, on the basis of his results, established the following principles: The typical column-shaped diverticulum, if larger than a plum, must be resected in one procedure. For smaller diverticula, Girard's operation can be considered, particularly if the patient is old or his general condition is poor. Although, bifurcated diverticula need no surgical treatment, large diverticula should be resected. Functional diverticula require no special treatment. Roth, Harkanyei and Belafalvi recommend the extirpation af all esophageal diverticula in one session, which they consider justifiable in view of the availability of antibiotics. According to them, invagination is permissible only for small diverticula.

Kukowaka discusses the diagnostic difficulty of diagnosing esophageal diverticula in extremely high locations. He reports a case in which the diverticulum was discovered only after complaints had been present for many years and treatment had been given for several years.

Griessmann discusses operation for cardial carcinoma. Of his 17 patients treated by radical intervention, 8 survived the operation. One patient survived more than five years. On the basis of his results, Griessmann mentions the possibility of a wrong diagnosis based on biopsy. He recommends a transthoracic procedure. Rapant, Sery, Doubravsky and Dvoracek described 2 cases of esophageal carcinoma with advanced idiopathic dilatation of the esophagus. This illustrates the prophylactic significance of Griessmann's operation in cases of mega-esophagus.

Traumatic Surgery

OTTO KINGREEN, M.D., F.I.C.S.
LUDENSCHEID

Numerous papers are concerned with the Sudeck syndrome, the increasing frequency of which is striking. Blumenstaat and Reichle emphasize the fact that the Sudeck syndrome is a disease of the whole human body, though local peripheral symptoms are its outstanding characteristics. Exogenous factors such as trauma, inflammation, cold, heat and electric current are nothing but "triggers." The recognition of the Sudeck syndrome calls for individual preparedness, in which physis of the elements must not be underestimated. The significance of regulation centers comes more and more to the the fore. According to Blumenstaat, in the center of the pathologic process is a disturbance of the neurohormonal regulation, involving the hormonal system in such a way that the STH-mineral corticoid group is more effective than it is normally. This pathologic function leads to a disturbance of the permeability of the blood vessels and thus to a change of the colloidal balance. This in turn produces a local acidosis, and this again causes damage to the walls of the vessels and dilates them. It also slows down the blood stream, greater permeability of the vascular walls to plasma and blood cells, disturbance of the osmotic pressure and finally, nutritional disturbances of the tissues and diminished discharge of the metabolic product. Kirsch observed serious changes in the endothelium of the vessels, with acuolisation and swelling of the various vessel layers. Woelez investigated the behavior of the eosinophilic leukocytes and the daily discharge of uropepsin with the development of Sudeck's syndrome; he noticed irregular curves, with pronounced change in the normal phases, within twenty-four hours. This points to an influence of the anterior lobe of the hypophysics and of the adrenal gland system. Dohrman and Thieme, as well as Uevermuth, noted decreased serum phosphatase as a sign of decreased osteoblastic activity in the presence of tissue acidosis. These data have resulted in valuable indications for prophylaxis and therapy; fractures should be reduced only with the aid of relaxing drugs. Plaster casts should be changed infrequently. Open reduction should be subject to strict indications. Local and central irritation should be avoided by all means. In the presence of serious fractures complicated by disturbances of the vegetative nervous system or by hormonal difficulties, the ganglionic blocking of ganglion and the injection of a ACTH are good prophylactic measures. Immobilization and elevation of the extremity prevents the Sudeck syndrome from becoming chronic. Reichle, Boehler and Blumensaat warn against active exercises, which create pain. Von Viten applies roentgen treatment because of its analgesic and spasmolytic effect.

The specific pathologic changes associated with tetanus are not yet clearly understood. In Spath's opinion the prodromal state is caused, just as are the initial state and full-blown tetanus, mesodiencephalitis. Homann considers inhibition of the cholinesterase activity on the motor end plate of the nerve, due to the tetanus toxin, at least partly responsible for the clinical symptoms of tetanus. He considers the administration of alkalin amino-acids, especially histadin and magnesium, helpful in the treatment of this condition. Animals can survive for many hours after infection with tetanus bacilli if they are treated with large amounts of antitoxin. The amount of antitoxin necessary, however, is not in proportion to the time that has elapsed since the application of tetanus bacilli but is much higher. For this reason, at least a half a million antitoxin units must be given to a human being once tetanus has started. In prognostically unfavorable cases of tetanus Pape used the fluid pump of Speranski and subsequent infection of 50,000 Etat serum into the lumbar sac. Christian and Schlaf likewise recommend the pump. Patients are also given serum injections into the carotid artery, as well as applications of Tetrazin. The favorable effect of Periston-N is due, according to Shubert, to fixation of the toxin by the colloids. The favorable effect of the hibernation-like sleep induced by Megafan is explained by Hossli as due to the influence of the Megafan on the acidosis of tetanus. In cases of serious closed injuries to the skull accompanied by coma, first attention must be given to the respiratory tract, which must be kept open (the patient's head should be kept low and turned to the side and a Mayo tube and a tongue forceps must be available. If necessary, a tracheotomy must be done and the bronchial space aspirated; oxygen must be given, and shock treatment is essential. Frowin recommends blood transfusion or high-molecular fluids to replace the blood, in order to dilate the peripheral vascular system. After the body fluids are in balance, but not before, Hydergin, Pendiomit and Phenotiazimen for inhibition of the vegetative nervous system must be given. In case the blood pressure rises early, a venous section would be done instead of a blood transfusion, if an intracranial hematoma can be ruled out. Venostasin favors venous drainage.

Artificial hibernation with Pendiomit cuts off the stimuli of the brain stem in its sympathetic and parasympathetic phases and prevents edema of the brain. This treatment may reduce the indications for surgical intervention. Children under 14 years of age and old persons, however, must be excluded from this treatment.

Every communicating injury of the nasal sinuses with the base of the skull must be considered an open brain injury. If the fluid drainage from the nose and the pharynx does not stop within thirty-six hours, an operation is indicated. Kuhlrndahl advocates a transfrontal intradural procedure, with plastic coverage of the torn dura from the inside.

Loew has established the following indications for surgical treatment of trauma to the optic nerve associated with frontal skull injuries:

1. Unilateral loss of vision in the presence of a normal fundus, if no improvement occurs by the fourth day.
2. Unilateral loss of vision with edema, unless improvement can be demonstrated by fourth day.
3. Partial loss of vision with secondary increase of the loss.
4. Narrowing of the bone channel of the potic nerve, demonstratable in roentgenograms.

Lennartz, Mueller and Klug report on subdural hematoma due to tear of the pontal veins and on its diagnosis and treatment. They emphasize the necessity of biopsy after drilling of the skull, in order to distinguish between a chronic hematoma and Pachy meningitis.

Of 40 patients with severe fractures of the skull complicated by injuries to the brain substance, only one-third were able to work without any disability five to eight years later. In the remaining cases, the defects observed after the accident had improved only partially or not at all. Dues observed in patients with injuries of the skull and brain an increased excretion of gonadotropic hormones of the hypophysis when Aschheim-Zondek's test for pregnancy was used. In his opinion, this explains the long-lasting vegetative initial disturbances, which otherwise are not part of the clinical picture. Ruckes and Gasteyer have shown, by microscopic observations, the occurrence of purely traumatic late apoplexy. Perivascular bleeding, edema, regressive vascular changes and degenerative foci may appear far from the site of the bleeding.

Injuries to the Thoracic Cage—The increase of serious closed thoracic injuries is in proportion to the increase of traffic and industrial accidents.

These injuries are seldom open. Conservative treatment of closed injuries to the thoracic cage, with aspiration and drainage, has not been disputed. Since the work of Zenker, nor has the necessity of operative care of mediastinal emphysema (mediastinotomy and parasternal incisions). If one cannot control cutaneous emphysema and tension pneumothorax by these means, an injury to the trachea or to a bronchus is, in all probability, present. In such a case the only successful treatment is thoracotomy, with exposure of the injury and plastic suturing of the trachea with muscle secured from the intercostal muscle. Loehr calls attention to disturbances of the small circulatory system in thoracic contusions, demonstrable by bronchospirometric means, and recommends the application of oxygen by nasal catheter. Zenker recommends adding intercostal anesthesia, which he considers extremely useful in combating pulmonary hypertension and edema, diffusion and hypoxemia. In cases of edema of the lung, however, tracheotomy is necessary if there is a perforating thoracic injury and airtight closure of the pleura is impossible. Laux recommends treatment with a vacuum capsule after Grunert. The capsule consists of a Plexiglas chamber with an air-filled rubber ring and elastic bandages, which is held tightly to the thoracic cage. By means of a pump a partial vacuum in this chamber is produced, that the edge of the chamber adheres tightly, by suction, to the thorax. A rubber window in the chamber, likewise airtight, permits aspiration and continues the rinsing of the pleura with antibiotics. Collapse of the lungs after blunt trauma to the lung is based upon atelectasis due to absorption. According to Mayor, the results of this are retraction and diminution of the volume of the involved lung area, with displacement of the mediastinum. The intrathoracic equilibrium is easily restored by pneumothorax and perilous condition thus immediately removed. Tauber points out chylothorax, though it often does not appear until several days after the injury and frequently only after the patient begun taking food, is accompanied by rather stormy symptoms. Should fasting and aspiration not cure the condition within eight to ten days, thoracic ligation at the site of the injury becomes a necessity. Location of the site of injury is facilitated, according to Tauber, by giving the patient cream six hours prior to the operation. If the site of injury cannot be found, the thoracic duct should be ligated on the right side just above the diaphragm.

Ruptures of the Liver—According to Staucke, the liver, like the lung, can be divided into individual segments. Each of the segments has a circulatory and biliary system with collaterals. Segmentally, each half of the liver is subdivided into four lobes, also may be surgically resected. In Staucke's opinion, hepatic resection will eventually have a special place in the treatment of rupture of the liver, because of its decided advantages over atypical surgical treatment (it seems that by "a typical" the author means operation that disregards the segmentation of the organ).

Moreover, segmental liver resection is dangerous.

Retroperitoneal Duodenal Injury—Diagnosis and therapy of the retropertoneal duodenal injury are discussed by Stafinic. In order that the duodenal injury may be treated properly mobilization of the hepatic flexures, including the transverse portion of the colon, is recommended. A rare injury of the intestines, injury by air pressure, is described by Weller. In the terminal portion of the intestine, if compressed air becomes so dense that it has the effect of a solid body, it may rupture the sigmoid.

Injuries of the Upper Extremities.—With regard to injuries to the shoulder of uncertain origin, Grassberger and Ceyss advise roentgen study of the acromioclavicular joint after filling the joint with Digodat. An injury of the joint capsule can be diagnosed by this method, especially in the axial view, in which one can see the contract medium exuded cranially and caudally.

So far the operative treatment of finger tendon injuries are concerned, the German surgeons proceed according to Bunnell, Von Moberg and Zrubecky. For injuries of the flexor tendons of the thumb, J. Boehler recommends Z-shaped lengthening of the tendon where it joins the muscle in the area of the forearm. In order to confirm an accompanying injury to the nerves at the fingers, Boehler advises examination of the patient's sweat with the otoscope. The presence of sweat pearls permits the conclusion that the nerves are intact.

Witt discusses the functional disturbance of the metacarpal phalangeal joint of the thumb that follows ligamentous tears in connection with fractures of the metacarpocarpal joints. In the presence of poor thumb grasping he recommends restitution of the function of the thumb by a fascial plasty of the first metacarpocarpal joint and by spanarthrodesis between the navicular bone, the multangulum majus and minus and the first metacarpal bone.

Injuries of the Lower Extremities.—The results of mailing of a fracture of the femoral neck are, according to Mittag, still far from satisfactory. According to Schuetze the results can be improved by inserting, instead of a nail, a bone graft secured from the boiled fibula of a cadaver. He was able to show histologically that such a graft, in contradistinction to the metallic foreign body, assumes close contact with the surrounding bone. The graft does not form new bone, however, but is absorbed gradually as new bone is formed in its environment. In Rehm's opinion the principal problem in the treatment of fracture of the femoral neck is the physiologic significance of the vascular system, which must be taken into consideration in doing osteosynthesis. He recommends a canalized nail, which is adjusted to the cranial part of the cross section of the femoral neck. The nail is split in its anterior section to supply space for revascularization of the upper lateral quadrant of the femoral head. For tearing of the collateral medial and the lateral ligament, Jelinek recommends the free fascial graft or the pedicle fascial graft and the plastic repair with the gracilis tendon, according to Mandl, if the injury is of the third degree. Injuries to the cruciate ligament are treated by the method of Hey-Groves.

Streli has devised a probe with curves made in different directions to facilitate the liagnosis of meniscal tear in the posterior third of the knee joint. This probe permits a traumatic examination of the knee and obviates the necessity of excising the meniscus. The same author advocates partial resection of the meniscus, which in his opinion prevents arthritis after total extierpation. He rejects Payr's incision in favor of his own approach. Removal of the patella with subsequent vastplasty according to Uppleger, is recommended by Baumgart as the best treatment for severe direct fractures of the patella.

Maatz discusses fractures of the tibial condyle and recommends early operation. He advises removal of a torn meniscus and goes so far as to advocate removal even of an intact meniscus if this is required for better exploration of the fractured condyle. After careful elevation and impaction, the fragments are immobilized with the so-called spongiosa spring. Lenz shares this opinion and reports satisfactory results with this treatment. According to Hauck, the main obstacle to reposition and regeneration in a long spiral fracture of the tibia is the large upward-pointing fragment and the lower tribial fragment, which frequently is considerably displaced toward the fibula. He recommends resection of the pointed end before the fragment is fixed with circular wire, but only if the sharp end of the fragment is denuded of grafted homoioplastic joint cartilage preserved periosteum and bone marrow, because otherwise the end will become necrotic and prevent regeneration.

Severe fracture-dislocations of the talotibial joints are treated by Kuentscher with parcutaneous nailing of the external malleolus. For these fractures, which are frequently complicated by tears of the interosseous ligament and consequently by spreading of the mortice, Meyer, reports successful use of the clamp, after Zueler.

Orthopedic Surgery

HANNS GALLI, M.D., MUNICH

Among the numerous books and monographs published in 1956, some deserve the special interest of the orthopedic surgeon. *The Roentgenological Differential Diagnosis of the Bone Disease,* by Hellner and Poppe,* must be considered a real standard work. In this book every bone disease is discussed according to topographic standpoints and is illustrated by excellent pictures. Equally important is *Spondylolisthesis of the Lumbar Spine* by Brocher and *Roentgen Examination of the Skeleton of the Child,* by Swoboda,* which, after a review of the properties of the growing skeleton, describes systemic and local developmental anomalies, as well as endocrine and growth disturbances and the nutritional and metabolic diseases. Inflammatory disease of bone, as well as disease of the reticuloendothelial system and changes of bone due to blood dyscrasia, are thoroughly discussed.

In the little volume *The Human Hand*** Lange discusses this "master work of creation" from an anatomic functional point of view and from the point of view of the physician. He has adorned the book with psychological, chirognomic and artistic illustrations naturally. The possibilities of modern orthopedic surgical treatment of the hand are also discussed. In a book by Burger and Knoblock, *The Hand in Diseases,** the hand is discussed as a mirror of the human character and of pathological organic disturbances.

*The Hand Book of Medicine of Athletic Diseases,*** by Arnold, gives an excellent review of the history, methods of examination, purpose of treatment, and other questions connected with diseases associated with athletic activities. In his monograph on causlagia, Trostdorf emphasizes that the syndrome is activated by an increased stimulation of the sympathicus. Every nerve can be involved in causalgia. Surgery of choice for this condition is elimination of the sympathicus. In mild forms, however, one may try treatment with insulin. Operation on the nerve itself is never indicated.

An interesting study from the medical-historical point of view is presented by Valentin his small book *The History of the Plaster of Paris Cast.*

The well-known book by Schade, *Theoretic Foundations for the Making of Prostheses,* has been published in a completely new revised edition.

A volume of discussions of the German Orthopedic Society (edited by Lange) conveys a good idea of the accomplishments of orthopedic surgery in Germany.

The first subject on the congress program is "Biology of the Bone and Cartilage." Krauspe describes the most recently acquired knowledge of the development of bone and matrix and the physiologic process of deposition of mineral salts and discusses the external factors that influence the formation of bone, its shape and its metabolism. The effect of the hormone on the growth of bone and bone metabolism is discussed by Nowakowski, who makes valuable diagnostic and therapeutic suggestions. According to Bernbeck, the gravidity hormone accelerates the maturation of bone and is able to shorten the treatment of congenital coxa vara. The clinical significance of hormonal disturbances is emphasized by Lange, who offers, as examples, scoliosis and congenital coxa vara.

The usefulness of the different materials used in bone grafting is evaluated differently by different authors. Maatz uses calf bone de-

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*Stuttgart: Georg Thieme Verlag, 1956.
**Stuttgart: Encke, 1956.

*Munich: Lehmann, 1956.
**Leipzig: Barth, 1956.

proteinized in hydrogen peroxide, while Guentz and Brueckschen use cialit bone and Edelberger and Hoffman prefer bone preserved in Palavit. Ritter states that hieronymous material can be successfully transplanted if preserved in a freezer. In his opinion the success of the transplantation depends upon preservation of the protein structure if the protein is despecifized. For this reason, boiled grafts kept in alcohol and homogenous or heterologous grafts prepared by dry sterilization are unfit, being nothing but dead foreign bodies. Cieber is convinced that the deep-freezing method causes fewer biochemical changes of bone than does cialit, a fact he discovered by observing the decomposition of fat and protein and also by determination of the phosphatase activity. In animal experiments using denatured heterologous bone, Kienholz and Kenkes say that they have encountered no anaphylactic reactions or disturbances in bony union of the transplant.

Transplantation of cartilage is likewise discussed. The results are frequently good. Reiss, on the basis of his animal experiments with homoioplastic cartilage preserved in the freezer, considers the cartilage still viable after twelve weeks and demonstrates union after twenty-two weeks. Ehlat successfully grafted homoplastic joint cartilage, preserved in the deep freezer, on 8 patients.

The second main subject of the orthopedic congress was "The Functionally Disturbed Hand." Witt presents an excellent review of this discussion. We just mentioned the substitution of the necrotic lunate bone by a prosthetic replacement and the plasty for the congenital dislocation of the metacarpo-phalangeal joint by Bunnell-Witt.

The third subject of the congress was "Chiropractic." Sell, the representative of this method, advocates the widest possible application of this method. He suggests the use of it in causalgia, Sudeck's atrophy, peri-arthritis-humerocapularis, intermittant claudication, Meniere's disease, etc. This attitude was unanimously rejected. An impengement of a villus in the small vertebral joints is recognized, as is the so-called dislocation or subluxation emphasized by chiropractic. Manipulation for the purpose of relieving this condition is generally considered justified. Chiropractic methods in general, however, should be rejected except for a few definite disturbances; for the majority of diseases of the spine, chiropractic is unsuitable, as Schlenzka emphasizes. Mau, Witt, Radthcke and Heipertz also point out the dangers of manipulation. The attitude of German orthopedic surgeons is best expressed in the words of Lange: "Mutual reduction may enrich the method of treatment of orthopath if a strict indication is made," and "The teaching of the chiropractor is hypothetical and unproven." The latter statement applies particularly to the teaching of Illi and Palmer, according to Lindemann.

Matzdorf states that he observed a deformity of the epistrophil dens of 80 per cent of all patients, none of whom had ever had any trouble referable to the cervical portion of the spine. This, he states, disproves the chiropractic theory that the asymmetric position of the dens is a source of complaints referable to the neck.

H. Junghanns, in his book *Roentgen Diagnosis and Clinic of Diseases of the Vertebral Column*, is extremely critical of the chiropractic theories.

In this technical age, which aims for perfection, medicine also is much influenced by thinking in physical terms. Hackenbroch, by numerous examples, demonstrates the close relation between orthopedics and technical applications. Like Hohmann, however, he emphasizes the fact that technical considerations must not supersede biologic and physiologic knowledge. The functional point of view with regard to the cooperation of muscle chains deserves special consideration. With regard to tendon transplantation in cases of spastic paralysis, according to Rettig, myotomy after Silferskioeld, possibly in combination with the Stoffel operation, can be recommended to accomplish firm subtalar fusion. Rettig uses the nail of Witt, which has three phalanges and is inserted from the talus. *Poliomyelitis.*—Behrend in 1956 published a book entitled, *Exogenic Factors in the Pathogenesis of Poliomyelitis*. Interestingly enough, he notes that exogenic factors in 1952 were demonstrated in only 1 per cent of the cases. Of the 35,765 patients with this condition in West Germany

from 1946 to 1955, 3,383, or approximately 10 per cent, died.

Circulatory Diseases.— Of the numerous publications on circulatory diseases, only those will be mentioned which deal with diagnosis. In Rathke's experience with arteriographic study of the foot, numerous anatomic differences become apparent if one compares these results with the text books on anatomy; therefore he proposes four types of arterial supply:

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Dalland emphasizes the possibility of accomplishing complete repair in children, particularly if an early diagnosis is made and modern antibiotics are employed. For the same reason, Bitzen emphasizes the significance of early diagnosis. Interesting is the fact that tuberculosis has never been observed in chondrodystrophic patient or in a spastic or flaccid extremity. Lankhagel discusses the difficulty and errors encountered in diagnosis. Scholze discusses favorably the surgical evacuation of a focus in the presence of tuberculosis spondylitis. Pia operates only if acute transectional myelitis is associated with spondylitis; he would wait at least six months to operate in a case of slowly developing transverse myelitis. Another representative of conservative treatment is Loeffler. According to him, a costal transversectomy, with evacuation of the tuberculous focus, is indicated only in the presence of complete transverse myelitis. Risko and his co-workers consider operation indicated only when conservative treatment fails and when calcified psoas abscesses are present. The removal of such an abscess should be accompanied by excision of the vertebral focus, and fusion should be done as a second surgical procedure.

Glogowski compares the value of iliofemoral and the ischiofemoral extra-articular hip arthrodesis on the basis of results observed in the Lange clinic. While he thinks them of equal value, he points out that they have different indications. It is important to determine whether the root from the pelvis to the greater trochanter or that to the lesser is the shorter. He has been successful in 87.5 per cent of his operations. Hohmann discusses the value of the focal excision in cases of para-articular coxitis and the shortening of the time of treatment by means of extra-articular arthrodesis. Lerch resects tuberculous joint foci of the lower extremity subperiostally and fills the defect with spongiose bone and antibiotics. According to him, the ability to bear weight is present after twelve weeks. According to Kastert synovectomy is the most favorable method of treatment for gonitis. When there is involvement of bone, excision of the focus must also be done.

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Open reduction of hip dislocation is indicated, according to Krotschek, when closed reduction is impossible, and also for redislocation; furthermore, it is to be advocated when closed reduction remains distant to the acetabulum. This indicates the presence of interposition, which in turn will cause redislocation. According to Stracker, open reduction can be attempted in patients up to 15 years of age.

Lower Extremities.—The paper "The intraspongiose anesthesia in operations of the lower extremities," by Kohl, deserves great interest. So far, only Russian authors have reported on this procedure. By means of the cuff of a blood pressure machine applied at the desirable level, a pressure is produced which is 40 mm. of mercury higher than normal. A fairly large needle is inserted in the spongiosa of the calcaneus or the medial malleolus and procaine hydrochloride (0.25 per cent) is injected. In operations on the foot, 60 to 70 cm. is sufficient; higher, up to the knee, 80 to 100 cc. Kohl points out that this procedure decreases the muscle tonus almost totally. Complications have not been observed.

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A primary disease of the veins, of the endagnitic type, is recognized by Gerl by means of "Benography." His roentgen observations are proved histologically. Hess, considers plethysmographic study in venous stasis is the method that permits the best possible determination of the volume of the blood stream. Intra-arterial ATP injection of ATP are, according to him, superior to all other methods of treatment. In order to judge oxygen insufflation, Goldenhof and his co-workers use the caloriemetric probe and are convinced that they are able to confirm a true vascular reaction. Although Herr and Barthelmess interpret the response as a hyperamic reaction, the valuable diagnostic possibility seems to be in the radioiodine tests of Babat.

Bone and Joint Tuberculosis.—Erlacher reports on the European Symposium on the treatment of Skeletal Tuberculosis, which took place on the Semering near Vienna. Erlacher's report was published by Encke of Stuttgart. While there was agreement with regard to the cause, and conservative treatment of this condition, and particularly as to the significance of modern chemotherapy, opinion as to the indications for surgical treatment was not unanimous. All present, however, considered large caseous foci and para-articular foci absolute indications for operation. Likewise, extraarticular arthrodesis must be preceded by resection of large foci. Brunner and Kastert recommend early evacuation of a focus and evacuation of an abscess in cases of tuberculous spondylitis. Drell, Fellander and Erlacher fill the osseous foci with bone and antibiotics. Kastert prefers irrigation and drainage.

Dalland emphasizes the possibility of accomplishing complete repair in children, particularly if an early diagnosis is made and modern antibiotics are employed. For the same reason, Bitzen emphasizes the significance of early diagnosis. Interesting is the fact that tuberculosis has never been observed in chondrodystrophic patient or in a spastic or flaccid extremity. Lankhagel discusses the difficulty and errors encountered in diagnosis. Scholze discusses favorably the surgical evacuation of a focus in the presence of tuberculosis spondylitis. Pia operates only if acute transectional myelitis is associated with spondylitis; he would wait at least six months to operate in a case of slowly developing transverse myelitis. Another representative of conservative treatment is Loeffler. According to him, a costal transversectomy, with evacuation of the tuberculous focus, is indicated only in the presence of complete transverse myelitis. Risko and his co-workers consider operation indicated only when conservative treatment fails and when calcified psoas abscesses are present. The removal of such an abscess should be accompanied by excision of the vertebral focus, and fusion should be done as a second surgical procedure.

Glogowski compares the value of iliofemoral and the ischiofemoral extra-articular hip arthrodesis on the basis of results observed in the Lange clinic. While he thinks them of equal value, he points out that they have different indications. It is important to determine whether the root from the pelvis to the greater trochanter or that to the lesser is the shorter. He has been successful in 87.5 per cent of his operations. Hohmann discusses the value of the focal excision in cases of para-articular coxitis and the shortening of the time of treatment by means of extra-articular arthrodesis. Lerch resects tuberculous joint foci of the lower extremity subperiostally and fills the defect with spongiose bone and antibiotics. According to him, the ability to bear weight is present after twelve weeks. According to Kastert synovectomy is the most favorable method of treatment for gonitis. When there is involvement of bone, excision of the focus must also be done.

In the treatment of acromioclavicular dislocation, the Bunnell's fascial plasty, as well as

the use of a screw according to Bosworth, gives good results. Kuchenreucher uses a screw with a large surface.

For supra-condylar fractures of the elbow, Block recommends fixation of the fragments with percutaneous wires. According to Uebermuth, the plaster of paris cast is not responsible for Volckmann's contracture, which not infrequently follows this type of injury. Nor can an injury to the brachial artery be responsible, because there is sufficient collateral circulation. Volckmann thinks in terms of overstretching of the ulnar and median nerves. Sperling on the contrary, considers damage to the brachial artery responsible. In the experience of the Lange Clinic also, injury to the brachial artery and the subsequent hematoma are the essential causes of ischemic contracture. Wernstein reports on this subject in an excellent paper dealing with fracture of the elbow in children and its treatment.

Morveja discusses congenital dislocation of the radius (head of the radius) as reported in the literature and adds a case in which a medial dislocation presented itself. Kivel, in handbook fashion, discusses diseases of the wrist and the surrounding region.

Kotthagen and Von Hepp report on the possibilities of prosthetic aid to the arm amputee. Hepp has tried to add to the development of the American hopp prosthesis. He expresses enthusiasm concerning the effectiveness of the Heidelberg pneumatic arm prosthesis. He and Reinhardt report their experiences with the prosthesis over a period of ten years. Marquardt and Haefner discuss the technical problems connected with this prosthesis.

Wiedemann and Deiker illustrate by means of excellent pictures the possibilities of pantopague myelographic study in establishing proper operative indications in the presence of traumatic damage of the brachial plexus.

Some of the numerous papers dealing with congenital dislocation of the hip deserve special attention. Kaiser emphasizes the increased antetorsion as the cause of many failures. The buttonhole operation of Loeffler, therefore, is often indicated. In this procedure the fascia lata is split in front of the trochanter and fixed posteriorly to it in order to keep the proximal end of the femur in internal rotation (?). The rotation osteotomy is performed as a second operation. Bette reports the results of treatment of 102 hip dysplasias and dislocations and the use of a modified Forrester-Brown splint after manipulation. The advantages of these procedures are that they are nondamaging. The femoral head bores itself into the acetabulum; there is no muscular atrophy; regeneration of the acetabulum roof is accelerated, and disturbances of the femoral head are rare.

Open reduction of hip dislocation is indicated, according to Krotschek, when closed reduction is impossible, and also for redislocation; furthermore, it is to be advocated when closed reduction remains distant to the acetabulum. This indicates the presence of interposition, which in turn will cause redislocation. According to Stracker, open reduction can be attempted in patients up to 15 years of age.

Lower Extremities.—The paper "The intraspongiose anesthesia in operations of the lower extremities," by Kohl, deserves great interest. So far, only Russian authors have reported on this procedure. By means of the cuff of a blood pressure machine applied at the desirable level, a pressure is produced which is 40 mm. of mercury higher than normal. A fairly large needle is inserted in the spongiosa of the calcaneus or the medial malleolus and procaine hydrochloride (0.25 per cent) is injected. In operations on the foot, 60 to 70 cm. is sufficient; higher, up to the knee, 80 to 100 cc. Kohl points out that this procedure decreases the muscle tonus almost totally. Complications have not been observed.

Traumatic Hip Dislocation: Fineschi reports 7 cases; Trojan and Pesohl, more than 79 observations in twenty-three years, and Grobelski, 7 cases. This injury requires immediate careful reduction. A simultaneous fracture of the acetabular roof worsens the prognosis considerably. Vollmar and Wagler state that they have observed necrosis of the femoral head in 50 per cent of the cases. In order to improve the results and prognosis, they advocate reduction by means of longitudinal and transverse traction on the leg; this is important for the first forty-eight hours, after which reduction of the acetabular fossa by rectal digital manipulation is essential. Erhalt and Gelehrsis also discuss the problems, secondary injuries and therapy of this important injury.

In early diagnosis of slipped epiphysis of the hip, the lateral view is very important (Esser). In this view a widening of the epiphyseal plate can be seen rather early. Hormonal influences are responsible for the slipping of the head. Lange and Lange demonstrate that a decrease of the sexual hormone or an increase of the growth hormone produces softening of the femoral epiphysis. Early diagnosis is important; it improves the results of the treatment, because the slippery epiphysis can be held in place by means of a bone span. A valuable confirmation of the significance of the hormonal metabolism is found in the information given by Schlueter and Peter, who observed a coxa vara of the epiphyeal area in a 46-year-old dwarf. Slipping was possible because the epiphyseal plate had persisted owing to the hypophyseal disturbance. Goetz prefers the roentgen projection of Lauenstein, because in this view softening and widening of the epiphyseal plate can be seen very early.

Many diseases of the juvenile hip give rise to senile malum coxae in later years (Pitzen). The cause of coxarthrosis is damage to the cartilage combined with preservation of function, after dislocation, inflammation, Perthes' disease and slipped epiphysis.

It recommends the Arthrodesis In the treatment of coxarthrosis, arthrodesis by means of the Witt nail (M, 119) or nail and bone span according to Lange, is recommended if conservative treatment fails. For the bilateral condition arthroplasty is indicated. Voss (C, 351 and M, 954) describes the so-called temporary hanging hip, in which the fascia lata is widely incised laterally and arteriorly, the greater trochanter is osteotomized and tenostomy of the adductors is added.*

Imhauser (C, 354) states that essential improvement has been obtained by shifting the trochanter proximally and medially. In arthroplasty of the hip, Judet's prosthesis is considered preferable to the vitallium cup so far as Germany is concerned (Neff—L II, 693). Witt (L II, 668) wishes to narrow down the indications for arthroplasty in favor of arthrodesis. Arthroplasty in the young is absolutely contraindicated. In the presence of protrusion of the acetabulum, the rather deep socket should be filled in with the resected femoral head. Reimers (L II, 680) recommends the large endoprosthesis to prevent necrosis of the femoral head and neck, which is the main cause of failures. Heinze (L II, 700) explains the shortcomings of endprosthesis by the particular artificial material of the prosthesis and by its poor static insertion. On the basis of anatomic-morphologic examinations, Halshofer (B, 352) concludes that in arthroplasty of the hip the normal length of the femoral neck must be preserved and its angulation determined according to that of the other femuro. The congruency of the joint surfaces is important. The formative stimulus of the endo prosthesis produces functional adaptation. Capsular rigidity and absorption of the neck of the femur are detrimental to success.

Mittelmeier and Linger (A, 519) demonstrate, in a readable antomic-histologic paper, that the Plexiglas endoprosthesis produces a relatively valuable new joint formation. They observe that the regenerated capsule is lined with a new synovial membrane and the acetabulum with fibrous cartilage. Plexiglas slivers produced by friction may lead to foreign body granuloma. In order to prevent loosening of the prosthesis by pressure absorption of the bone, longitudinal grooves in the prosthesis are suggested.

In the diagnosis of uncertain diseases of the knee joint, Leyss (A, 403), prefers a magnified roentgen film of an arthrogram taken with a contrast medium; thus clear, unmistakable pictures are produced. Anders (G, 19) adds 18 cases of juvenile aseptic necrosis of the patella (Larson-Johannson's disease) to the 25 cases already published in the world literature. This condition is characterized by a light patella and transitory limitation of flexion and extension of the knee. Roentgen study reveals spotty atrophy of the patella and sometimes complete fragmentation. The fact that this condition may be associated with spina bifida occulta gives rise to the question

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*Without knowledge of the original paper, it is difficult to understand what is involved in this procedure.—*Translator.*

of a casual connection between the two conditions.

On the basis of mechanical mathematical consideration, Kesselbach (B, 240) points out that in supracondylar osteotomy for habitual patellar dislocation, rotation must be laterall, because only then is the quadriceps pull increased medially.

In 7 per cent of the cases of tearing of the ligamentum collaterale fibulare, Jonasch (U, 336) states that he has observed damage to the nervus peroneus that might necessitate surgical exploration. Jelinek (KI, 205) considers early operation necessary to repair the lateral and medial collateral ligaments. The results are good in more than 80 per cent of the cases.

Stedfeld (B, 532) rejects the granuloma theory to explain giant cell tumors about the knee joint. He considers them bone tumors. He suggests partial or total synovectomy, followed by roentgen treatment because of the danger of recurrence.

Aberle-Horstenegg (B, 414) describes 5 cases of the rare tibia vara (Blount's disease). In 1 case, treatment with a splint succeeded in correction and healing of the epiphyseal disturbance in a short time.

According to Muralt (A, 501), damage to the distal tibial epiphysis, often overlooked in children, leads to deformities that necessitate palliative surgical intervention (osteotomy). For late deformities simple osteotomy is unsatisfactory. Hohmann (A, 199) suggests that a bone graft be inserted into the tibia (after osteotomy?) and epiphysodesis of the fibula.*

Muralt (A, 263) treats the rare dislocation of the peroneus tendon by means of a so-called "malleolar roof plasty." The posterior malleolar section is elevated like a lid by means of a chisel, and a pedicled fascial strip, reinforced by nylon, is attached to the tendon. A monograph on "heel pain" and its causes is offered by Stuecke.** Klevel (P, 51) has observed good results from hydrocortone injections. Schoenbauer states that in dislocations and fracture-dislocations of the talus the best results are achieved by reduction. For comminuted fractures arthrodesis is preferable. Arthrodesis is superior to removal of the talus. Contactures of the bones of the foot are based either on congenital changes or on static functional disturbances. One of the more frequent causes is the coalition between calcaeus and navicular bone. According to Brands (A, 202), the exact diagnosis of this condition can be made only in oblique views, and only surgical treatment can relieve the symptoms. Ernsting (A, 433) suggests subtalar arthrodesis.

Nagura (E, 187) develops a new theory of congenital clubfoot: that repeated extension and flexion of the lower extremity *in utero* are responsible for the deformity.

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*It is difficult to understand this procedure without reading the original article.—*Translator.*

*Stuttgart: Georg Thieme Verlag, 1956.

(To be Concluded in May)

If the brain is injured by a blow or in some other way and concussed, the patient immediately falls to the ground, becomes speechless and can neither see nor hear. Most cases are fatal.

Following brain injury, fever generally appears and there is bilious vomiting together with paralysis of the body: such patients are in fatal case.

—*Hippocrates*

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
Collège international de chirurgiens
6-8 rue de la Confédération
Genéve (Suisse)

Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

The following pages comprise

Section II

the BULLETIN

of the
Journal
of the
International College of Surgeons

COLLÈGE INTERNATIONAL DE CHIRURGIENS

FOUNDED BY DR. MAX THOREK

Twenty-Fourth Annual Congress
North American Federation
International College of Surgeons

Palmer House

Chicago, Illinois September 13-17, 1959

The North American Federation Comprises

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HAITI
GUATEMALA
HONDURAS

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THE UNITED STATES OF MEXICO

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The Journal of the International College of Surgeons

Vol. 31, No. 4 SECTION II April, 1959

BULLETIN

Embodying Activities of the World Federation of General Surgeons and Surgical Specialists, Section News and Comments

Editor-in-Chief—MAX THOREK, M.D.
Associate Editor—PHILIP THOREK, M.D.
Consulting Editor—MORRIS FISHBEIN, M.D.
Assistant Editors—DOROTHY LANGLEY AND HELEN WEISS

CONTENTS

Page
Comments by the Founder: Importance of National Sections.............. 5
French Section Reception Center.................................... 6
Doorways to Europe... 8
Third Lecture Series... 10
Postgraduate Courses and Conferences............................... 11
From the Executive Director's Notebook............................. 12

UNITED STATES SECTION

The President's Message.. 14
New York State Surgical Section Annual Spring Meeting............. 17
Florida State Chapter Elects Officers............................. 21
Indiana Regent's State Meeting.................................... 22
Announcement of Awards Offered by Section on Obstetrics and Gynecology and by Section on Ophthalmology and Oto-Rhino-Laryngology.... 25
Journey Into Freedom.. 26
Joseph Anthony Malejka, M.D., New York City, New York

Woman's Auxiliary

The President's Message.. 30

SECTION NEWS

Austria 32
Ecuador 34
Israel 35
The Philippines 35
Peru 36
Thailand 36
Medical News Front.. 37
In Memoriam 39

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

May 6 Indianapolis, Indiana	Indiana State Division U. S. Section, International College of Surgeons
May 9-10 Tel Aviv, Israel	Israel Section International College of Surgeons
May 21 Bangkok, Thailand	Thailand Section International College of Surgeons
May 21-22 Huntsville, Alabama	Alabama Surgical Section U. S. Section, International College of Surgeons
May 28-30 Kiamesha Lake New York	New York State Annual Meeting U. S. Section, International College of Surgeons
May 29-30 Athens, Greece	Greek Section International College of Surgeons
June 1-3 Hamburg, Germany	German Section and German-Speaking Sections, European Federation International College of Surgeons
June 19-21 Lyons, France	French Section International College of Surgeons
July 25-26 Amsterdam, Netherlands	The Netherlands Section International College of Surgeons
August 8-9 Helsinki, Finland	Finland Section International College of Surgeons
August 19-20 Vienna, Austria	Austrian Section International College of Surgeons
August 22-23 Munich, Germany	German Section International College of Surgeons
August 25 Paris, France	French Section International College of Surgeons
September Santos, Brazil	Brazilian Section International College of Surgeons
September 28-29 Chattanooga Tennessee	Tennessee Valley Medical Assembly U. S. Section, International College of Surgeons
September 30-October 4 Guayquil, Ecuador	Ecuador Section International College of Surgeons
October 30 Hong Kong, China	China—Hong Kong Section International College of Surgeons
November 2 Bangkok, Thailand	Thailand Section International College of Surgeons
December Taipei, Taiwan (Formosa)	China—Formosa Section International College of Surgeons
December Jaipur (Rajasthan) India	India Section International College of Surgeons

(Continued on next page)

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

MIDSUMMER POSTGRADUATE EUROPEAN TOUR

July 17 - August 27, 1959

Dr. Ross T. McIntire, Coordinator

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation

(Canada, Mexico, U. S., Central American and Caribbean Sections)

International College of Surgeons

SEPTEMBER 13-17 CHICAGO, ILLINOIS

AROUND-THE-WORLD POSTGRADUATE CLINIC TOUR

October 10 - November 28

Dr. Edward L. Compere, Coordinator

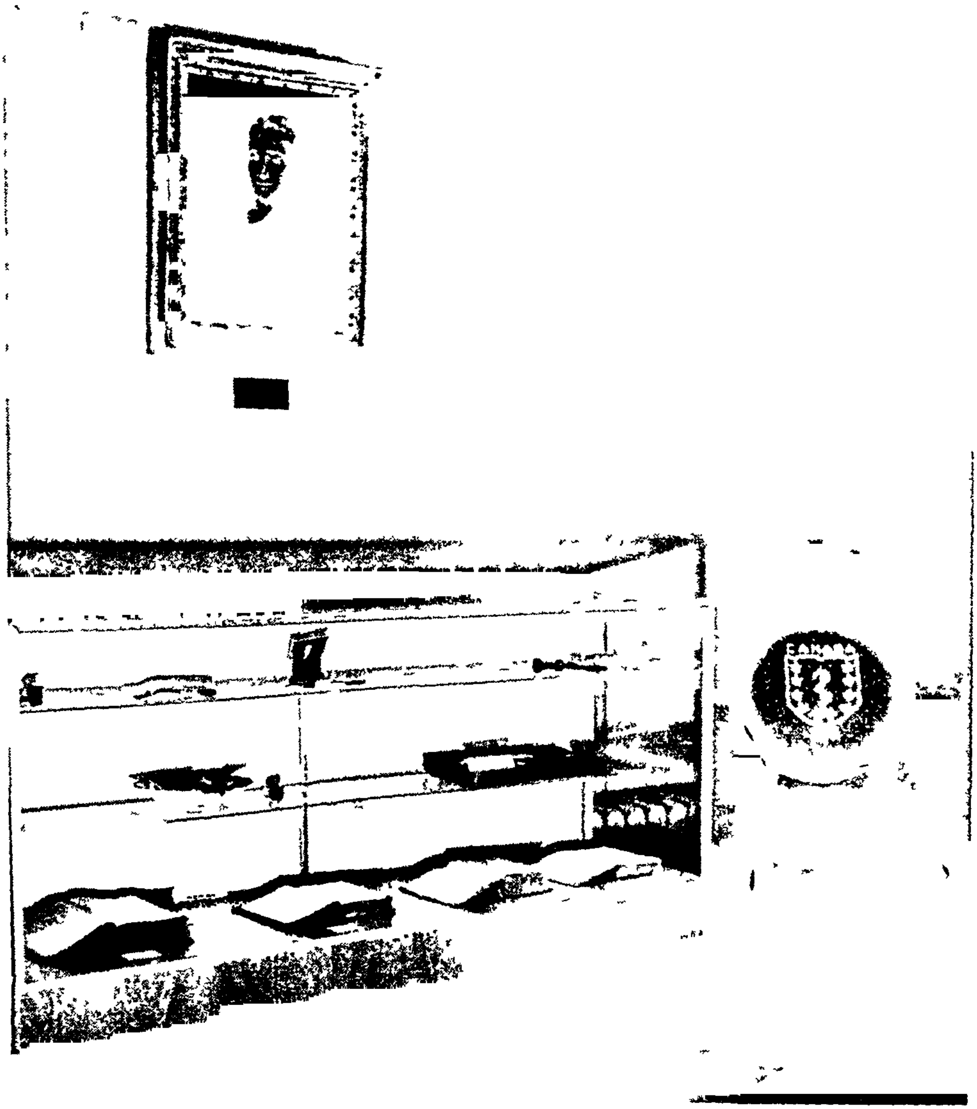
1960

TWELFTH BIENNIAL INTERNATIONAL CONGRESS

International College of Surgeons

Prof. Dr. Pietro Valdoni, Congress President

MAY 15-18 ROME, ITALY



COMMONWEALTH ROOM IN SURGEONS' HALL OF FAME

The Canadian Room in the International Surgeons' Hall of Fame has a quality that entices visitors to linger and admire the portrait of Edward Jenner, the gift of Dr. and Mrs. Walter F. Charteris. The portrait hangs above a glass case in which are displayed two bistouries, the gift of Dr. Lyon H. Appleby, which Jenner had used as scarification knives. Other exhibits, presented by the Canadian Section or by individual donors, are equally interesting.

Comments by the Founder

IMPORTANCE OF NATIONAL SECTIONS

Dr. Max Thorek

Last month I discussed the increasing tempo of the international activity of the College. I pointed to the growth of cooperation within the Federations as evidenced by the coming joint meeting, in Hamburg, June 1-3, of the German Section and the other German-speaking Sections of the European Federation, namely Austria, Switzerland and the Netherlands. I also called attention to the two-way attraction that lies at the heart of the success of our Postgraduate Clinic Tours. The traveling surgeons are drawn to the Fellows of the Sections they visit by mutuality of purpose, and the host Sections welcome the visitors as emissaries of good will, with whom they seriously, and as equals, discuss the problems of surgical science, technic and progress.

Furthermore, in previous articles I have commented on various movements and undertakings in which the College is engaged that advance international amity and add stature to the surgical profession. Many of these projects naturally originate in the College—the great International Congresses, the International Hall of Fame, honoring the surgeons of the entire world, and the very concept of surgery as a science and an art that gratefully recognize that their roots go deep down into the history of all nations. Acknowledging this debt to the universal past, the College seeks to spread the fruits of surgical knowledge and skill among all the peoples of the world. To that end we are dedicated.

We welcome allies in our endeavors, and gladly we give our help to the efforts of others. We cooperate with agencies of government, national and international. We extend the hand of friendship to all men and all organizations that, like us, strive for a happier future for this, our mundane sphere, threatened as it is by forces inimical to the concept of democracy and the humanistic ideals of existence.

To achieve all this, to encompass the wide program we have outlined for ourselves through the International College of Surgeons, we must be strong.

Strength, for us, begins with the individual national Sections.

Each Section of the International College of Surgeons is a wellspring of power. The College itself is only the sum total of sectional achievement.

It is, consequently, a great source of personal satisfaction to me and to all of us who have the welfare of the College at heart to see the national Sections of the College go from strength to further strength and to greater achievement in our joint endeavor to advance our ideals.

The evidence is incontrovertible. Each day there comes to me as International Secretary-General of the International College of Surgeons a sheaf of communications that report the multitude of activities of our Sections. I am heartened and profoundly gratified as I consider the scientific meetings, the conferences, the aid given to students and to young surgeons, not only by the central body, but by individual Sections. This is important work. It is significant in itself, and it transcends itself because it adds to the collective strength of the College.

The conclusion therefore is obvious. It is the chief duty of each Section to look to its own strength: to increase its membership, *to guide its young surgeons, and* to add substantially to the status of surgery in its own country. In that way it participates most effectively in the College program and best serves those far-visioned *ideals to which we are pledged.*

Max Thorek

Inauguration of Reception Center in Paris

French Section of the International College of Surgeons

Through the courtesy and devoted interest of **Dr. Pierre Jean Viala, F.I.C.S.,** former head of the Clinic of the Faculty of Medicine in Paris, arrangements have been made for a reception room and center of information that will serve the French Section of the International College of Surgeons. The French Section graciously extends the privilege of using the facilities of the center to all the Fellows of the College.

Clinique de l'Alma

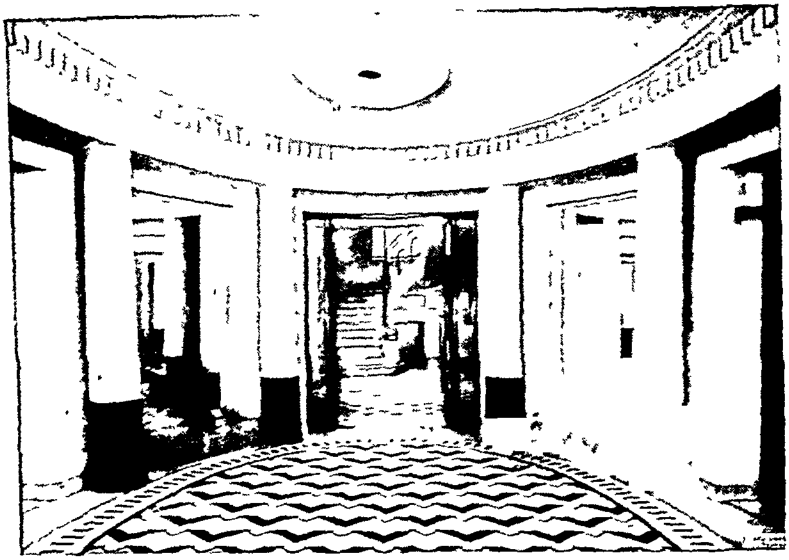
The center is located at the *Clinique de l'Alma in* the *rue de l'Université,* number 166, in Paris. We are invited to make note of the telephone number, which is *Invalides 13.70, Paris,* and to use it at our convenience.

The Center is prepared to provide information to members of the International College of Surgeons concerning clinics, scientific events, College activities, and, in general, to render such services as a visitor is very likely to be in need of and greatly appreciate.

The *Clinique* is one of the most important clinics in Paris. A number of the Fellows of the International College of Surgeons residing in Paris operate in this institution in general surgery and the specialties. It is in the neighborhood of the Latin Quarter, near the *Camp de Mars* and the Eiffel Tower.

In the clinic, rooms have been set aside by Dr. Viala where visitors may gather for rest and relaxation. Up-to-date scientific journals in French and other languages are available. The rest rooms have baths and all other comforts. Secretarial service is also provided.

Dr. and Mrs. Viala visited the United States last spring and attended the Inter-

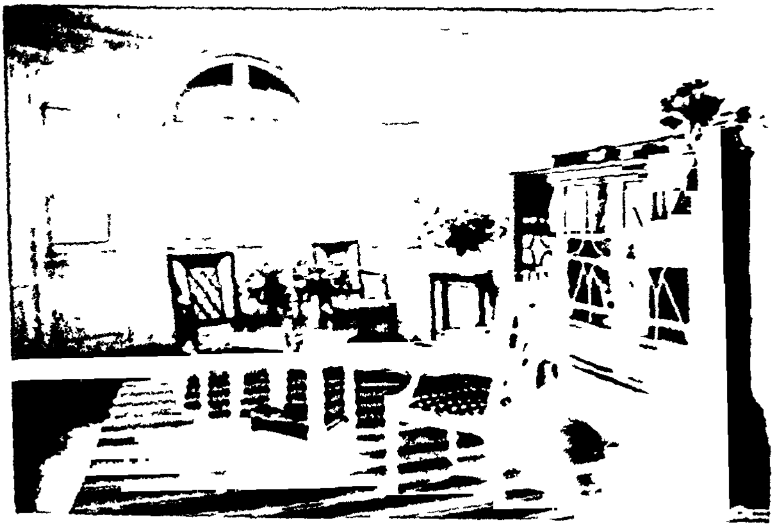


Entrance Hall
Center of Information
and Reception
French Section
International College
of Surgeons
at
La Clinique de l'Alma
Paris, France

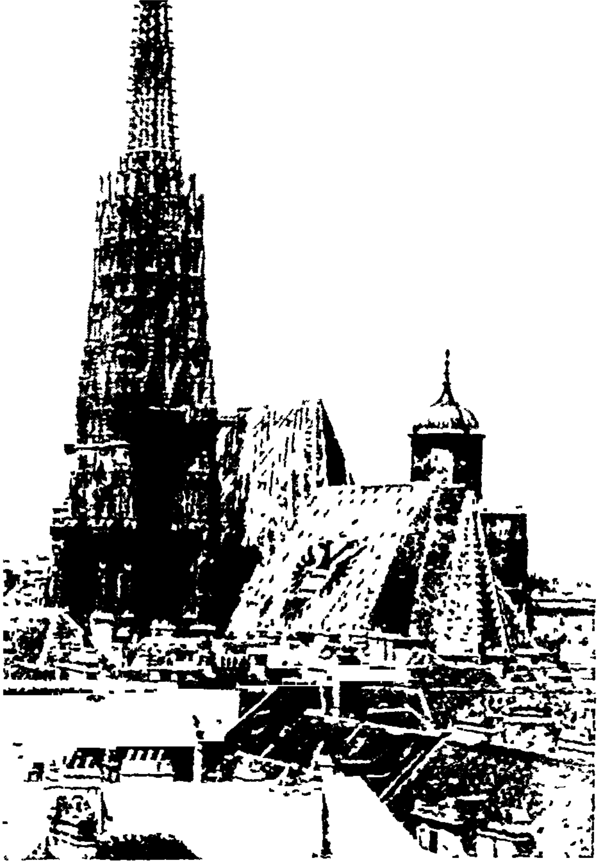
national Congress in Los Angeles. They were warmly received everywhere, as was only due to Dr. Viala's surgical status and to the innate social gifts of both. On their way across the country they stopped off in Chicago and made a tour of the International Surgeons' Hall of Fame and the College Home. Impressed by what he saw, Dr. Viala began to ponder the possibility of doing something comparable, on a scale to suit the situation, in Paris.

Upon his return to his home he began to organize this center, which is now complete. His purpose is to make visitors from foreign countries comfortable and give them a sense of home, and he warmly urges all the members of the College who travel abroad and come to Paris (and who, traveling, does not come to Paris?) to take advantage of the facilities which have been established precisely for the purpose of serving them.

The College congratulates Dr. Viala upon his far-sighted thoughtfulness and is grateful to him for establishing this center of information and hospitality.



Special salon at the Clinique de l'Alma reserved for visiting members of the International College of Surgeons



Doorways to Europe

MIDSUMMER EUROPEAN POSTGRADUATE TOUR

July 17 - August 27

By this time the membership of the United States Section of the International College of Surgeons will have received an attractive brochure which describes the midsummer postgraduate clinical tour, with a heading of *Doorways to Europe.*

The clinical attractions for the surgeons making this tour are excellent, but this brief article is given over to the added attractions that all of us should be interested in. It is really an historical travelogue.

Going to Holland for our initial visit takes us into a land whose history goes back more than one thousand years. It will be our good fortune to see how Holland was built from the marshes and lowlands, and how modern Holland has saved itself from the sea with one of the most astonishing engineering projects of modern times.

Denmark dates back to the same period, and was at one time one of the great seafaring countries of the world. All of us know the great feats of the Vikings. Had the Vikings possessed the characteristics of the modern Dane, they would have undoubtedly settled in North America well before the Spanish and English. There will be much to see in this country that gave to the world Hans Christian Andersen and the setting for one of Shakespeare's great plays. From a scenic standpoint, it has much to offer.

Perhaps the outstanding scenic portion of this tour will be in Norway. Oslo, our

Above: What the Eiffel Tower is to Paris, the Gothic spire of Stephen's Cathedral is to Vienna, a city evocative of thoughts of its greatness in surgery as well as in music

Below: The market square in Helsinki, with, in the background, its famous Great Church

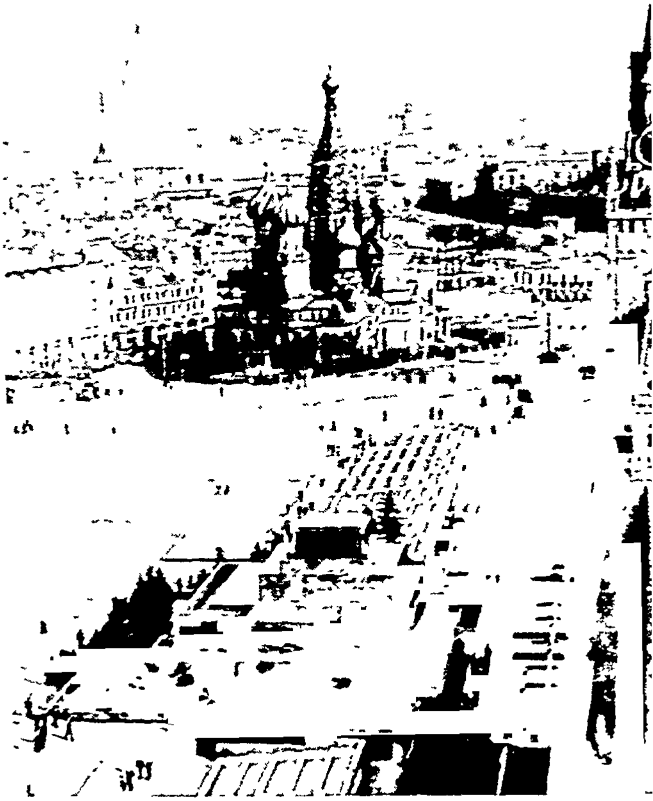
port of call, was founded by King Harald in 1048. The Norwegians have a great history, and contributed much to the seafaring world from the eleventh century on. Our time is well arranged in this delightful country. The Norwegians should be remembered for their great courage in withstanding the Germans in World War II.

The visit to Sweden will be much more of the same—for here, too, we will have the opportunity of going through the centuries—seeing the progress that this country has made.

Finland's capitol, Helsinki, is one of the finest cities of Europe. It is known as the *White City of the North,* and had its founding more than four hundred years ago. The amazing thing about this land is that less than one per cent of all people are illiterate. Finland is known for its great courage and its national integrity. There is a great bond between this country and the United States of America. Not only will we want to see all that is possible of their national life, but here we will meet with one of our strongest national Sections.

Russia may be approached as a great question mark! Certainly there will be much to see in Leningrad, which is a beautiful city. Peter the Great was responsible for its building, and today it still stands as one of the most attractive of all the European cities. Moscow, the capitol, is situated in the Volga Valley. Historically, it goes back to the twelfth century. It is my hope that we will have an opportunity of seeing how the Russians live in these two cities. We also hope, as professional men, to have the opportunity of seeing work in their hospitals.

From this point we go on to cities we know well—Vienna, Munich and Paris.



Above: Red Square in Moscow, with many-domed St. Basil's Cathedral, the red-brick walls of the Kremlin and, in the foreground, the Lenin-Stalin Mausoleum

Below: Outdoor restaurant in Amsterdam on the bank of one of its picturesque canals

THIRD LECTURE SERIES

1958-1959

School of the History of Surgery and Related Sciences
International Surgeons' Hall of Fame
1524 Lake Shore Drive, Chicago

LECTURES BEGIN AT 8:00 P.M.

OCTOBER 21, 1958 . . . . *"Changing Concepts of Disease"—Dr. Ilza Veith, Associate Professor in the History of Medicine, Department of Medicine, University of Chicago, Chicago, Illinois*

NOVEMBER 11, 1958 . . . . *"Epochs in the History of Medicine"—Dr. Morris Fishbein, Professor Emeritus of Medicine, University of Chicago and University of Illinois, Chicago, Illinois*

DECEMBER 2, 1958 . . . . *"The History of Hospitals"—Dr. Charles U. Letourneau, Director, Program in Hospital Administration, Northwestern University, Chicago, Illinois*

JANUARY 13, 1959 . . . . *"The History of Gynecology"—Dr. A. F. Lash, Clinical Professor of Obstetrics and Gynecology, University of Illinois, Chicago, Illinois*

FEBRUARY 3, 1959 . . . . *"The History of Neurosurgery"—Dr. Percival Bailey, Distinguished Professor of Neurology and Neurological Surgery, University of Illinois, Chicago, Illinois*

FEBRUARY 24, 1959 . . . *"Notes About the Role of Physicians in Our Military History"—Dr. George S. Lull, Assistant to the President, American Medical Association, Chicago, Illinois*

MARCH 24, 1959 . . . . . *"Evolution of Medical Illustration"—Thomas S. Jones, M.S., Emeritus Professor of Medical and Dental Illustration, University of Illinois, Chicago, Illinois*

APRIL 14, 1959 . . . . . . *"The History of Surgery of Bones and Joints"—Dr. Edward L. Compere, Professor and Chairman of the Department of Orthopedic Surgery, Northwestern University and Chicago Wesley Memorial Hospital, Chicago, Illinois*

MAY 5, 1959 . . . . *"The Evolution of Otorhinolaryngology and Bronchoesophagology" — Dr. Francis L. Lederer, Professor and Head of Department of Otolaryngology, University of Illinois, Chicago, Illinois*

MAY 21, 1959 . . . . . . *"The History of Plastic Surgery"—Dr. Wayne B. Slaughter, Clinical Professor in Charge of Plastic Surgery, University of Wisconsin (Madison) and Stritch School of Medicine, Loyola University, Chicago, Illinois*

Postgraduate Courses and Conferences

INTERNATIONAL COLLEGE OF SURGEONS

AUSTRIA

VIENNA

The American Medical Society of Vienna
and
The University of Vienna

Postgradute Courses in Surgical Science Provide Opportunities for Postgraduate Work in Various Fields of Surgery

For information write: Dr. M. Arthur Kline, F.I.C.S., Secretary, American Medical Society of Vienna, 11 Universitätsstrasse, Vienna, Austria.

FRANCE

Special Course in Urologic Surgery

May 14-16, 1959

Prof. Dr. Raymond Darget, F.I.C.S.
of the University of Bordeaux
at the
Cancer Prevention Center and the
Clinic Saint-Augustine
BORDEAUX

Subjects

Treatment of tumors of the bladder, including radium therapy and palliative measures such as denervation of the bladder and uretero-intestinal anastomosis.

Treatment of malignant prostatic tumors by perineal ischio rectal implantation of radium needles.

The course will include operations, films, presentation of patients and results of treatment.

Number of participants is strictly limited. Those interested should write promptly to

Prof. Dr. Raymond Darget
17, rue Castéja
Bordeaux, France

SPAIN

BARCELONA

Hospital de la Santa Cruz y San Pablo
Surgical Service

Dr. Jose Solar-Roig, F.I.C.S.
DIRECTOR

ADVANCED COURSES IN SURGERY OF THE DIGESTIVE TRACT
(For Postgraduates)
Under the Auspices of the
International College of Surgeons

UROLOGIC INSTITUTE

Dr. A. Puigvert, F.I.C.S., Director

COURSE XX

POSTGRADUATE SEMINAR
on
Diseases of the Bladder
Symptomatic and Surgical Aspects

April 20-25, 1959

This seminar, lasting six full days, from 8:30 a.m. to 7:00 p.m. will include practice in endoscopy and urography.

Those registered for the seminar will be limited in number and may continue their work at the Institute for three months.

For further information address: Secretaria del Instituto de Urología, Pabellón de la Asunción, Hospital de la Sta Cruz y San Pablo, Barcelona 9, España.

United States Section

THE PRESIDENT'S MESSAGE

The New Directory and Other Items of Interest

Dr. Edward L. Compere

If you have not already sent your check for the new *Directory* of Members and Fellows of the International College of Surgeons, I do hope that you will stop right now, get out your checkbook, write the check, and send in your order. Enough orders have been received to make it possible to print the *Directory* in a very simple form. If we are to make it more attractive, we will need to have orders from almost all the members. I am so pleased that we are getting ready to publish this *Directory* that I have ordered three copies—one for my office, one for my home, and one to keep at my summer cottage in Michigan. This *Directory* is something that we have long needed and just what many of you have been asking for.

New Members

I am mailing a special letter as my personal message to each member of the United States Section of the International College of Surgeons. Among other things, I am requesting each member of the College to make a real effort to obtain an application for membership from at least one other surgeon who is highly qualified and who would bring credit to our College. I should like very much to see at least a thousand new members brought into the College during my term as president. This is entirely within the realm of possibility if each member will cooperate. I cannot overemphasize the fact, however, that we want as new members only those surgeons who have had adequate training and who are otherwise thoroughly qualified.

Nomina Anatomica

No association of surgeons could more appropriately support the movement to adopt an international terminology than the International College of Surgeons. Language differences still constitute the greatest barriers to understanding among the people of different countries around the world. *Nomina Anatomica* is the title chosen for the latest anatomical terminology which is based on Latin, the terms having been selected by the International Anatomical Nomenclature Committee (I.A.N.C.). Latin is still the most useful international language for scientific purposes. Insofar as possible, the Committee has chosen the terms which are most readily translatable into modern languages.

This matter should be of interest to our regents and others who have been working actively for the International College of Surgeons and are always on the alert for projects which the College could sponsor to advance understanding and good will among doctors in various countries around the world, the promotion of which would add to the prestige of the College.

I am suggesting that the College consider the advisability of boldly sponsoring and widely advertising this new international terminology.

The revised *Nomina Anatomica* was

published and distributed by Williams and Wilkins of Baltimore, after it had been restudied thoroughly by the International Anatomical Nomenclature Committee in 1956. Most of the terms used would be familiar to anyone who understands medical terminology and especially to the doctor who has managed to retain a little of the Latin that he studied in high school. Thus, *articulatio* refers to joints, *myology* to muscles, and *systema nervosum* would be recognized immediately as referring to the nervous system. I should like to invite those who read this message to communicate with me. If you are interested in this subject, I will write more about it in future messages.

Southern California

Earlier this month I spent about ten days in California. The primary purpose of my trip was to meet with the regent, vice-regents and the credentials committee, and to attend, as guest speaker, the annual dinner and business meeting of the Southern California Chapter of the International College of Surgeons. **Regent Joseph de los Reyes**, the vice-regents and other members gave Mrs. Compere and me a very delightful time. We thoroughly enjoyed our visit. I am glad to report that the hearts of our colleagues in Southern California are strong and they are trying to make this one of the best chapters of the International College of Surgeons in the United States.

Importance of Vice-Regents

It has become increasingly obvious to most of us here at the Home Office that more vice-regents are needed in almost every state. There should be a vice-regent in every major city and in each area where we have a nucleus of members. The vice-regents are very important to the College. We depend upon them for information about applicants for Associate Membership or Fellowship. The regent may find it necessary to call a vice-regent on the telephone to get information about a candidate who lives in an area that is too far away for the regent to know him at all. The growth of the College depends upon the active support of the vice-regents in interesting the best surgeons in each area of the country in the work of the International College. Each vice-regent should be concerned to point out the ideals of the International College and the work which we are doing around the world to those surgeons of his acquaintance who would be of the greatest help and strength to us if they became members. Our future depends to no small degree upon the activity and help of the vice-regents, and within the next few weeks we expect to appoint many more of them throughout the country.

Edward L. Compere

$200,000/$600,000 Limits of Liability are now available to members covered under the ICS Group Malpractice Insurance Plan.

Please write to John L. Krause, Administrator, 1576 Sherman Avenue, Evanston, Illinois, for rates and further details regarding the Plan.

THE TREATMENT OF THYROID DISEASE

Moderator:
Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., Madison, Wisconsin

Participants:
Seymour W. Meyer, M.D., F.A.C.S., F.I.C.S., Jamaica, New York
Max Michael Simon, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, New York
Joseph P. Alvich, M.D., F.A.C.S., F.I.C.S., Bronx, New York
George A. Degenshein, M.D., F.I.C.S., Brooklyn, New York
Lindon Seed, M.D., F.I.C.S., Chicago

THE THERAPY OF ADVANCED BREAST CANCER

Moderator:
Henry Patrick Leis, Jr., M.D,. F.A.C.S., F.I.C.S., New York City

Participants:
Ralph R. Coffey, M.D., F.A.C.S., F.I.C.S., Kansas City, Missouri
Maurice M. Black, M.D., F.C.A.P., New York City
Henry M. Selby, M.D., F.A.C.R., New York City
George C. Escher, M.D., New York City
Oscar Hugh Fulcher, M.D., F.A.C.S., F.I.C.S., Washington, D.C.

AFTERNOON

Presiding:
William H. Godsick, M.D., F.A.C.O.G., F.I.C.S., New York City

Secretary:
Charles L. Reigi, M.D., F.A.C.S., F.I.C.S., Staten Island, New York

PROBLEMS IN OBSTETRICS AND GYNECOLOGY

Moderator:
John George Mussio, M.D., F.A.C.O.G., F.I.C.S., Brooklyn, New York

Participants:
Gilbert F. Douglas, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., Birmingham, Alabama
Magin Sagarra, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., New York City
Martin L. Stone, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., New York City
Ernest F. Purcell, M.D., F.A.C.O.G., F.I.C.S., Trenton, New Jersey
Harry J. Greene, M.D., F.A.C.O.G., F.A.C.S., Brooklyn, New York
Edward Solomons, M.D., F.R.C.P.I., F.R.C.O.G., F.A.C.O.G., F.A.C.S., Brooklyn, New York

THE MANAGEMENT OF PATIENTS WITH MULTIPLE INJURIES

Moderator:
Edward L. Compere, M.D., F.A.C.S., F.I.C.S., (Hon.), Chicago

Participants:
Anthony F. DePalma, M.D., F.I.C.S., Philadelphia
Arthur A. Michele, M.D., F.A.C.S. F.I.C.S., Brooklyn, New York
Theodore K. Himelstein, M.D., F.I.C.S., New York City
Samuel Thomas Glasser, M.D., F.A.C.S., F.I.C.S., New York City
Samuel Simon, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, New York
James W. Watts, M.D., F.A.C.S., F.I.C.S., Washington, D.C.

PROBLEMS IN PROCTOLOGY

Moderator:
James Patrick Fleming, M.D., F.I.C.S.,
Rochester, New York

Participants:
Sylvan D. Manheim, M.D., F.I.C.S.,
New York City
Jack White McElwain, M.D., F.A.C.S.,
F.I.C.S., Amityville, New York
Lester S. Knapp, M.D., F.A.C.S., F.I.C.S.,
Buffalo, New York
J. Edwin Alford, M.D., F.A.C.S.,
Buffalo, New York
Con Armore V. Burt, M.D., F.A.C.S.,
F.I.C.S., New York City

Saturday, May 30, 1959

MORNING

Presiding:
Peter J. Timpone, Sr., M.D., F.I.C.S.,
Staten Island, New York

Secretary:
Gaspar M. Adamo, M.D., F.A.C.S., F.I.C.S.,
Long Island City, New York

RECONSTRUCTIVE SURGERY

Moderator:
D. McCullagh Mayer, D.D.S., M.D.,
F.A.C.S., F.I.C.S., New York City

Participants:
Jerome Gelb, M.D., F.A.C.S., F.I.C.S.,
West Orange, New Jersey
Michael L. Lewin, M.D., F.A.C.S., F.I.C.S.,
New York City
Stephen D. LoVerme, M.D., F.A.C.S.,
East Orange, New Jersey
Ross T. McIntire, M.D., F.A.C.S., (Hon.),
F.I.C.S., (Hon.), Chicago

THERAPY FOR INTRACTABLE PAIN

Moderator:
Juan Negrin, Jr., M.D., F.I.C.S.,
New York City

Participants:
Dante V. Bizzari, M.D., F.A.C.An., F.I.C.S.,
New York City
Francis S. Latteri, M.D., F.A.C.An.,
New York City
Gerald H. Klingon, M.D., F.A.C.P.,
New York City
Raymond W. Houde, M.D., New York City

CARDIOPULMONARY EMERGENCIES OF INTEREST TO THE GENERAL SURGEON

Moderator:
Samuel Alcott Thompson, M.D., F.A.C.C.,
F.C.C.P., F.A.C.S., F.I.C.S.,
New York City

Participants:
Irving S. Shiner, M.D., F.C.C.P., F.A.C.S.,
F.I.C.S., New York City
Adrian Lambert, M.D., F.A.C.C., F.A.C.S.,
F.I.C.S., New York City
Frank A. Gagan, M.D., F.C.C.P., F.I.C.S.,
Poughkeepsie, New York
Victor C. DeLuccia, M.D., F.C.C.P.,
F.A.C.S., F.I.C.S., New York City

AFTERNOON

BIOATOMIC MEDICINE AND CIVIL DEFENSE

Edwin J. Grace, M.D., F.A.C.S., F.I.C.S.,
Brooklyn, New York

COMMITTEE CHAIRMEN

Horace E. Ayers, M.D., F.A.C.S., F.I.C.S. (Hon.), New York City
GENERAL CHAIRMAN

Milton S. Weinberg, M.D., F.A.C.O.G., F.I.C.S., Jackson Heights, New York
CHAIRMAN, GENERAL ARRANGEMENTS COMMITTEE

Franklyn B. Theis, M.D., F.A.C.S., F.I.C.S., Nyack, New York

CHAIRMAN, ADVISORY COMMITTEE

Henry Patrick Leis, Jr., M.D., F.A.C.S., F.I.C.S., New York City
CHAIRMAN, SCIENTIFIC PROGRAM COMMITTEE

Magin Sagarra, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., New York City
CHAIRMAN, MOTION PICTURE COMMITTEE

Ernest G. Abraham, M.D., F.A.C.O.G., F.I.C.S., New York City
CHAIRMAN, SCIENTIFIC COORDINATING COMMITTEE

John G. Mussio, M.D., F.A.C.O.G., F.I.C.S., Brooklyn, New York
CHAIRMAN, PROCEDURE COMMITTEE

Gilbert M. Palen, M.D., F.I.C.S., Margaretville, New York
CO-CHAIRMAN, PROCEDURE COMMITTEE

Mrs. Magin Sagarra
Chairman
Women's Reception Committee

Sam Clayton, M.D., F.I.C.S., Kew Gardens, New York
CHAIRMAN, PUBLICITY COMMITTEE

Martin L. Stone, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., New York City
CHAIRMAN, REGISTRATION COMMITTEE

Charles H. Thom, M.D., F.A.C.O.G., F.A.C.S., F.I.C.S., Staten Island, New York
CHAIRMAN, HOSPITALITY AND RECEPTION COMMITTEE

ACCOMMODATIONS

AMERICAN PLAN	3 Day Rate Thurs.-Sun.	
Executive Room, Two Baths—New Bldg.	$91.00	☐
Super De Luxe Room—New Bldg.	85.00	☐
De Luxe Room—Main House	79.00	☐
Private Bath Room—Adj. Bldg.	67.00	☐
Semi-Private Bath—Adj. Bldg.	61.00	☐

RESERVATION BLANK

TO CONFIRM RESERVATIONS. PLEASE SEND CHECKS AND RESERVATIONS TO: Concord Hotel, Kiamesha Lake, New York. ATT'N: International College of Surgeons. Please Make Deposit Checks Payable to: CONCORD HOTEL.

NAME ....

ADDRESS ....

Number in Party............Ladies........Gentlemen........

A Registration fee of $5.00 per doctor will be added to your bill.

GRATUITIES: THE ABOVE RATES INCLUDE GRATUITIES FOR DINING ROOM AND CHAMBERMAID.

The above rates are per person, based on two persons in each room, from after lunch on Thursday to after lunch on Sunday. The Concord is an American Plan Hotel and the rate includes three full meals daily.

Please check accommodations desired.

CHILDREN'S RATE: $47.00 in same room as parents and includes gratuities and registration fees.

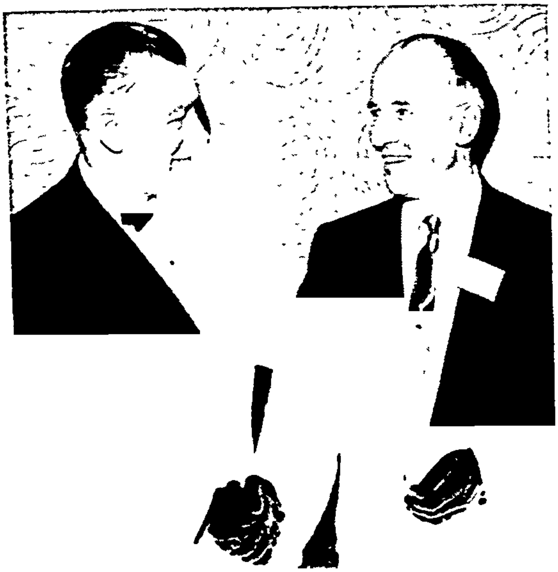
SINGLE OCCUPANCY: $5.00 daily additional.

A DEPOSIT OF $10.00 PER PERSON IS REQUIRED.

Florida State Chapter Elects Officers

SOUTHEASTERN REGIONAL MEETING

United States Section, International College of Surgeons



Dr. Harold O. Hallstrand (left) congratulating Dr. Claude F. Mentzer of Miami upon his election as president of the Florida State Chapter of the College

At its meeting in Miami Beach on January 4, 1959, the Florida State Chapter elected the following officers for the current year:

PRESIDENT
Dr. Claude G. Mentzer, F.I.C.S., D.A.B., Miami

VICE-PRESIDENT
Dr. Alfred G. Levin, F.I.C.S., D.A.B., Miami

SECRETARY-TREASURER
Dr. Herbert W. Virgin, Jr., F.I.C.S., Miami

MEMBERS OF THE BOARD
Dr. Frank L. Meleney, F.A.C.S., F.I.C.S., D.A.B., Miami
Dr. Carl McLemore, F.A.C.S., F.I.C.S., D.A.B., Orlando
Dr. H. Quillian Jones, F.A.C.S., F.I.C.S., Fort Meyers
Dr. James A. McLeod, F.I.C.S., D.A.B., Orlando
Dr. A. H. Lisenby, F.I.C.S., Panama City

Dr. Harold O. Hallstrand, F.A.C.S., F.I.C.S., D.A.B., of Miami, the general chairman of the Southeastern Regional Assembly held in Miami Beach January 4-7, 1959, is being generally and enthusiastically congratulated upon the success of the Assembly and upon the effectiveness of his efforts in organizing and coordinating the complex machinery which resulted in a memorable surgical meeting.

Dr. Homer F. Marsh, dean, University of Miami School of Medicine, welcoming guests to Assembly banquet

Dr. Homer F. Marsh, dean of the University of Miami School of Medicine, delivered the welcoming address at the banquet, which was held on Tuesday evening, January 6, at the Bal Masque Room of the Americana Hotel and climaxed the social activities of the Assembly.

Indiana Regent's State Meeting

INDIANAPOLIS, INDIANA
May 6, 1959

Dr. John D. Van Nuys, Dean
Indiana University Medical Center

The Indiana Division of the United States Section of the International College of Surgeons will hold its Annual Regent's Meeting at the Indiana University Medical Center in Indianapolis on May 6, 1959.

The scientific session will begin at 8:55 a.m. and continue to 4:30 p.m., with luncheon at the Student Union.

PROGRAM

Address of Welcome
JOHN D. VAN NUYS, M.D., Dean, Indiana University Medical Center

Anesthetic Risk Evaluation of Surgical Patient
CYRIL TAYLOR, M.D., Instructor in Anesthesia, Indiana University Medical Center

Perforation of G. I. Tract in Infants
ROSCOE E. MILLER, M.D., Associate Professor of Radiology, Indiana University

Thyroid Malignancy
GOETHE LINK, M.D., F.I.C.S., Indianapolis

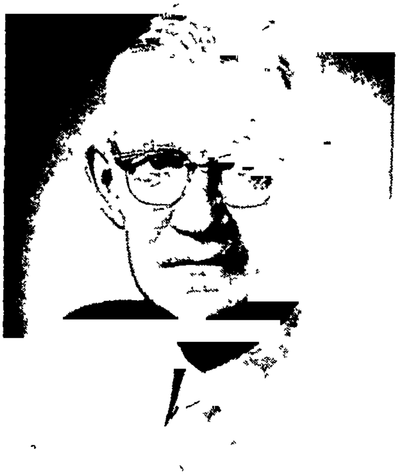
Indications for Surgical Treatment of Peptic Ulcer and Advisable Surgical Procedures
CLAUDE J. HUNT, M.D., F.A.C.S., F.I.C.S., Kansas City, Missouri

Surgical Treatment and Diagnosis of Breast Tumors
STANLEY BATTERSBY, M.D., Professor of Surgery, Indiana University

Types of Colostomies and Indications
PETER ROSI, M.D., F.A.C.S., F.I.C.S., Associate Professor of Surgery, Northwestern University Medical School, and Professor of Surgery, Cook County Graduate School, Chicago

Surgical Evaluation of Epigastric Pain
J. K. BERMAN, M.D., F.A.C.S., Associate Professor of Surgery, Indiana University

Indications for Open Reduction of Fractures
GEORGE GARCEAU, M.D., F.A.C.S., F.I.C.S., Professor of Orthopedics, Chairman of Orthopedic Department, Indiana University Medical Center

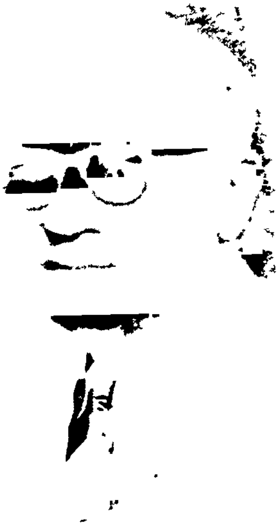


Dr. Paul E. Haley
Regent

Paul E. Haley, M.D., F.I.C.S., of South Bend, is Regent of Indiana for the United States Section of the International College of Surgeons.

Program Committee

Walter P. Moenning
M.D., F.I.C.S.
Indianapolis



Emmett B. Lamb
M.D., F.A.C.S., F.I.C.S.
Indianapolis

John W. Emhardt
M.D., F.A.C.S., F.I.C.S.
Indianapolis
Chairman
Arrangements and Program Committees

Simon Reisler
M.D., F.I.C.S.
Indianapolis
Secretary

Robert D. Fry
M.D., F.I.C.S.
Indianapolis
Treasurer

SOCIAL PROGRAM

There will be a banquet in the Travertine Room of the Sheraton-Lincoln Hotel, highlighted by an address on *Sputniks, Space and You* to be given by Robert J. Kryter, consulting engineer.

The banquet will be preceded by a social hour.

The regent and the committee extend a cordial invitation to all surgeons, medical practitioners, their ladies and guests.

Journey Into Freedom

EXCERPTS FROM A TWENTIETH CENTURY BIOGRAPHY
PART I

JOSEPH ANTHONY MALEJKA, M.D.
NEW YORK CITY, NEW YORK

Dr. Joseph Anthony Malejka

It was the year 1946 and my desire to leave Poland was increasing from month to month.

I was twenty-one years old. In a certain sense I was many years older, for, having been shipped to Germany at sixteen to undertake slave labor on a German farm, having escaped and then served over three years as a courier with the Polish underground, I had learned many facets of the art of self preservation. I had also seen my parents' farm confiscated by the Germans, my father deprived of his livelihood as a teacher, and my young friends disappear, some never to be heard from again, others to rot in German concentration camps or to return home broken both in spirit and in body.

Thus the experiences of war had matured me beyond my twenty-one years. However, in another sense I was typical of any youth of twenty-one. I was filled with dreams for the future and with longing for higher education and for an opportunity to prepare for the profession I had chosen, that of medicine. And, above all, for many years I had hoped and prayed and planned to achieve individuality and happiness in a world with loyalty to both country and God.

My father had been opposed to my departure. What would I do in Germany, providing I were successful in passing the iron curtain? Where would I go, a youngster, a stranger in the country, completely without friends to guide me? My determination to work, earn money and study he felt to be immature romanticism. I argued that I could get help from UNRRA, which had founded a University in Munich. After several weeks of persuasion, however, my father at last withdrew his objection, and by June I had therefore both my father's and mother's blessing.

Then began a week of preparation. This consisted of packing cigarettes and various food conserves which we had received once a month from UNRRA in the year after the war. I wished to carry as little as possible and yet have sufficient food to last me two weeks. In addition, I had some German money which I knew was still recognized as valid in occupied Germany. Also I had the sum of fifteen American dollars which has been sent after the war by friends in England to my relatives. This money I had sewn into a seam in my trousers and I knew I would resort to it only in the direst emergency. A tailor made me a new sports suit with wide pockets and this enabled me to take about twenty packages of Camel cigarettes with me. My final preparations included the packing of two changes of shirts, underwear and socks and a generous supply of soap.

I was fortunate in having authentic information concerning means of crossing. There were three main routes. One was along the Baltic coast; the second along the mountain range in the south of Poland, and the third through Czechoslovakia to the American zone. These were used by the thousands of Poles who traveled to join their families or were political refugees. These routes were by no means known to the public. Yet information was available to any interested person. My future experience was to prove that it was far from easy to cross the border at any of these points. Yet, with persistence and the prayers of those behind, especially my mother's, I did succeed.

During the period of preparation and the initial stages of my escape I was fortunate in having a close friend. I shall call him Henry. The same age as I, he had been forced into uniform by the Germans, sent to the front and then, when wounded, transferred to the occupation forces in France. After VE day, he was captured, sent to a PW camp for a few weeks and finally allowed to return home to Silesia. I urged him to accompany me across the border. But he was tired and unwilling to leave home after his long absence. Whereas I had been fortunate in being able to finish my secondary education, he had not, and now he felt the wiser course for him to follow was that of completing his education and entering the University as a student of commerce. However, though reluctant to accompany me across the border, he was most desirous of assisting me in every way he could to get me to the actual point where I would cross. In this way he would be able to bring back news of my success or failure to my parents. Also, two of us traveling together would present a normal picture of two student tourists traveling in Western Poland.

Thus, on the morning of Saturday, July 6, 1946, with my initial preparations completed, I said goodby to my parents, my home, the traditions, friends, way of life and even the language which had nourished my twenty-one years. At the moment of saying farewell to my parents and

Dr. Joseph Anthony Malejka, now a third-year surgical resident at Beekman-Downtown Hospital in New York City, was the recipient of the 1956-1957 international scholarship offered by the Woman's Auxiliary to the United States Section of the International College of Surgeons. He spent that year as a fellow and assistant resident in surgery at the Albert Einstein College of Medicine and the following year as resident in general surgery at Beth Israel Hospital in New York City. In September 1957, Dr. Malejka read one of three resident award essays presented at the Twenty-Second Annual Congress of the North American Federation of the International College of Surgeons. His paper, The Metabolic Response to Surgery, *was accepted for publication by the* Journal of the International College of Surgeons *November 5, 1957, and published in September 1958.*

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

Anticipating Pleasant Experiences

Mrs. Earl Ingram Carr

Tenaciously, your president's message has held to the theme of membership in the Woman's Auxiliary. The incontrovertible reasons for belonging, the advantages, the usefulness and purpose of the organization all have been set forth repeatedly.

There is more, however, to this international organization than its major project, the furthering of foreign exchange scholarships. There is Glamour spelled with a capital "G" and a "u."

The international meetings are held in the most fascinating cities in the world. And you, as a member of the Auxiliary, can attend with full status the Congress of the International College of Surgeons in Rome a year from this May. It is our hope that our Auxiliary will have a large representation at this distinguished conclave.

The setting for this meeting conjures many happy recollections for those who have been in Rome and offers a delightful vista of new experiences for those who will be visiting this historic city for the first time.

Rome's resurgence since the dark days of World War II has been amazing. Its economy, reflecting, as it does, the whole of Italy, has been bounding along at a sports-car pace. The romantic and historic aura attached to Rome rivals that of Paris. International travelers, returning to their homes, are filled with wonderment at a city that emerges fresh and sparkling, no matter what the adversity.

Its society glitters with high fashion and sophisticates who are alive to the stringencies of the nuclear age. Its resilient economy seems destined to spiral to new heights, and it is very probable that it will be experiencing the full impact of prosperity by the time we arrive a year from May.

Aside from the many elegant social events that will encompass the meeting, you must plan now to allot ample time for leisurely sightseeing. There is nothing quite like a sunset in Rome when the domes of this ancient city are bathed in rose-colored hues.

The food in Rome is satisfying to the palate of a gourmet. American opinion of Italian food is mistakenly centered on such things as minestrone, spaghetti, risotto and ravioli. And I must not forget pizza. True Italian cuisine is superb. It has a way of upsetting the most stubborn caloric intentions. In fact, to the diet-conscious, it presents a seemingly endless array of pitfalls. You might declare a

Memento of Florida GLAMOUR: Mrs. William G. Thuss of Birmingham, Alabama, Mrs. Edward L. Compere of Chicago and Mrs. Arnold S. Jackson of Madison, Wisconsin, presenting winner's trophy to jockey at the special race honoring the International College of Surgeons at Tropical Racetrack Park, Miami, on January 5, 1959

moratorium on calorie-counting if you are planning the Rome trip. A gastronomical delight that will serve as a conversational piece for years to come is *Chicken Nero,* flamed in cognac and laurel, with *Salad Messallina.*

I, for one, am looking forward to a drive down the Via Appia, to a stop at the Catacombs of Saint Calixtus, and to dinner at the restaurant of Saint Calixtus.

Much has been written about the change in the Vatican since the enthronement of Pope John XXIII. It is quite possible that we will all get a glimpse of the new Pontiff during our visit. It has been noted that since his election the Holy Father has mingled more with the people of Rome than is the custom of the Popes. This charming informality and gregariousness has no doubt communicated itself to the already generously hospitable Italian people.

You can see that the trip to Rome is the equivalent to an unforgettable experience.

Ruth Smith Carr

I am interested in furthering the program of the Auxiliary to the International College or Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

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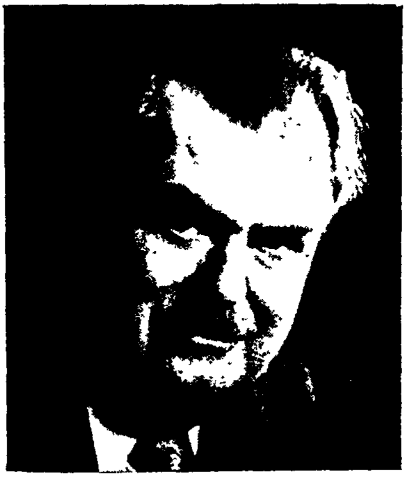
Section News

AUSTRIA

Seventieth Birthday of President Schoenbauer Widely Celebrated



Prof. Dr. Leopold Schönbauer, F.I.C.S.
President, Austrian Section

On November 13, 1958, one of the best-loved surgeons of Austria, **Prof. Dr. Leopold Schönbauer** reached his seventieth birthday. The universally renowned professor and president of the Austrian Section of the International College of Surgeons was honored by his many disciples, students and friends, and was congratulated by the Austrian government and the municipality of Vienna.

Prof. Schönbauer was born in a small town in lower Austria, one of a long line of medical men, his great-grandfather, grandfather and father having been physicians. After college and university studies, he received the Doctor's degree in 1914 at Prague (C.S.R.) *sub auspiciis imperatoris,* the highest distinction a university student could acquire at that time.

During World War I he served at the front with a group of surgeons from the Eiselsberg Clinic in Vienna. Prof. Eiselsberg noticed Schönbauer's aptitude for scientific work and his exceptional surgical skill, and, at the end of the war, was pleased to have him join his clinic. In 1924 Schönbauer received the *venia legendi,* and in 1930 took over the surgical section of the Vienna Community Hospital at Lainz. Three years later he became a university lecturer, and on April 1, 1939, he was appointed Chief of the First Surgical University Clinic in Vienna, succeeding Eiselsberg and Ranzi.

Prof. Schönbauer immediately applied all his great energy and imposing creative power to his clinical work. Attracted by his strong personality and talent for organization, many young surgeons came to his clinic for training and to benefit from his far-reaching surgical experience. With sure judgment Prof. Schönbauer selected the most promising of these young men, and together with them and older surgeons who had been at the clinic, built up an important surgical school.

World War II broke out a year after he had taken over the clinic. Now Schönbauer's work became even more extensive. The clinic was enlarged, and a section for cerebral injuries was added. At that time more than a thousand wounded or otherwise sick people were entrusted to his skill. When, in 1945, Vienna was heavily menaced, Prof. Schönbauer guarded the large hospital and clinic with personal courage and foresight. He saved the sick and wounded from hunger and imprisonment. Later, Schönbauer became director of the general hospital in Vienna, and was elected Rector Magnificus of the University of Vienna for the year 1953-54.

Schönbauer's special field is neurologic surgery, to which Cushing had introduced him in America in 1924. But he has made himself an excellent master of all other branches of surgery, which he practices. Therefore, it is understandable that his scientific papers, which number nearly three hundred, report upon the entire sphere of surgery.

Prof. Schönbauer is particularly interested in the history of medicine and surgery. After World War II he was therefore appointed Director of the Institute for Medical History at the University of Vienna. His book *The Medical Vienna* testifies to his competence in this field.

But Prof. Schönbauer is not only a surgeon renowned far beyond the Austrian frontier and a successful clinical teacher. His best and most striking characteristics are his humanity, his kindness, and, most of all, his great readiness to help all mankind. We, his disciples, have always admired his efforts to help not only the sick people entrusted to his care, but others, often quite unknown, who were in trouble and distress. Especially during the war and after, he was esteemed in Vienna for his charitable work. His sympathetic heart prompts him always to assist others by word and deed, not only as a physician, but as a human being.

P. Kyrle
VIENNA

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ogy, the Philippine College of Physicians and the Quezon City Medical Society, held a scientific meeting in the auditorium of the Faculty of Medicine and Surgery of the University of Sto. Tomas, on Monday, November 3, 1958, upon the occasion of the visit of the Around-the-World Tour of surgeons sponsored by the United States Section of the International College of Surgeons.

The Rev. Fr. Jesus Diaz, O.P., Regent of the Faculty of Medicine and Surgery of the University of Sto. Tomas, delivered the invocation. **Dr. Virgilio Ramos**, dean of the Faculty of Medicine and Surgery at the University, made the welcoming address, followed by the opening remarks of **Dr. Jose Fores**, president of the Philippine Section of the International College of Surgeons.

After the scientific program, which was presented by the American surgeons, the closing remarks were made by **Dr. Francisco Guzman**, president of the Philippine College of Surgeons.

On Wednesday, January 21, 1959, the Philippine Section again held a large meeting in the Sto. Tomas Medical Auditorium, at which the guest speaker was **Prof. S. Obrador Alcalde**, *professor and head of the* department of neurosurgery of the *Universidad Central de Madrid* and the *Instituto de Investigaciones Medicas*, also in Madrid, who spoke on brain tumors.

On March 3, 1959, at the Club Filipino, the Section held its annual meeting. Discussion centered on a proposed amendment to the constitution so as to conform with the constitutional provisions of other Sections of the College. A committee was appointed, headed by **Dr. Basilio J. Valdes** and including **Drs. Miguel Canizares, Fortunato Guerrero, Francisco Guzman** and **Angel I. Reyes**, to study the matter.

On March 14, the Section was host, at the Philippine General Hospital Science Hall, to **Dr. E. E. Claxton**, assistant secretary of the British Medical Society, who addressed the meeting on socialized medicine.

PERU

The first meeting of the Peruvian Section for the current year has been scheduled for Monday, April 13, in Lima.

The meeting will open with an address by the president of the Section, **Dr. Francisco Granã**, F.A.C.S., F.I.C.S. (Hon.), who will discuss the activities of the International College of Surgeons in the world today.

The scientific program will be as follows:

Partial Gastrectomy
DR. A. DIAZ UFANO
Torsion of the Testicles
DR. ALEJANDRO HIGGINSON
Plantar and Palmar Keratosis
DR. H. LANDAZURI

THAILAND

The Thailand Section of the International College of Surgeons will hold its mid-year meeting at the Chulalongkorn Pathological Auditorium in Bangkok on May 21, 1959.

The section is scheduling its annual meeting for November 2, 1959, in Bangkok, to coincide with the presence there of the International College of Surgeons Around-the-World Postgraduate Clinic Tour.

Major Gen. Sanguan Rojanavongse, M.D., D.Sc., F.R.F.P.S.G., F.I.C.S., is the president of the Thailand Section, and **Dr. Sem Pring-puang-geo**, F.I.C.S., is the secretary.

Medical News Front

DR. STANHOPE BAYNE-JONES HONORED

The board of directors of the Passano Foundation announces that Dr. Stanhope Bayne-Jones has been selected as the recipient of the five thousand dollar Passano Award for 1959.

This year's award is being presented to Dr. Bayne-Jones in recognition of a long and extraordinary service to science and medicine as educator and administrator in tasks of the highest importance, in all of which he has served with distinction and faithfulness. His most recent post was that of Chairman of the Secretary's Consultants on Medical Research and Education, Department of Health, Education and Welfare. The extensive and very significant report made to the Secretary of the Department has become known as the Bayne-Jones Report.

The award will be formally presented to Dr. Bayne-Jones during the convention of the American Medical Association in Atlantic City, when a reception and dinner will be held in his honor.

The Passano Foundation was formed in 1943, having as its sole purpose the encouragement of medical science and research, particularly that having a clinical application. It is sustained by annual contributions from The Williams & Wilkins Company, publishers of medical and scientific books.

DR. CASIMIR FUNK CELEBRATES BIRTHDAY

Dr. Casimir Funk

Dr. Casimir Funk, world-famous pioneer in vitamin research, marked his seventy-fifth birthday on February 23.

For the last two decades he has made New York his home, where he is still vigorously pursuing research on cancer and other medical problems. He is president of the Funk Foundation for Medical Research, a non-profit organization devoted to cancer and related research, supported in part by the U.S. Vitamin & Pharmaceutical Corporation.

Dr. Funk was born in 1884 in Warsaw, Poland, son of a prominent dermatologist. Educated in Switzerland, he received his Ph.D. in organic chemistry.

It was at the Lister Institute in London, in 1911, that Dr. Funk made his discovery which earned for him the accolade "father of vitamin therapy" and the acclaim of the world. He isolated from rice polishings a substance that cured beriberi, a ravaging oriental disease. Knowing this substance essential to life, he gave it the name "vitamine," later changed to vitamin. Shortly thereafter, he isolated crystalline nicotinic acid and other vitamin B components from extracts of yeast and rice polishings, and worked out the manner in which thiamine (vitamin B_1) is utilized by the body.

In the following years, Dr. Funk's research activities were expanded to include enzymes, amino acids, epinephrine, insulin, sex hormones, anterior pituitary hormones and other glandular extracts. He advanced the theory that minerals and vitamins are nutritionally interrelated and that, like vitamin deficiencies, mineral deficiencies are widespread and are usually multiple, rarely single. These concepts, once considered revolutionary, have now been confirmed, substantiated and adopted as universal knowledge.

TRAVEL GRANTS OFFERED BY THE AMERICAN GOITER ASSOCIATION

The Fourth International Goiter Conference will be held July 5-9, 1960, in London, England, under the auspices of the London Thyroid Club and the American Goiter Association. The American Goiter Association plans to make available to worthy candidates a limited number of travel grants for participants in this meeting.

Application blanks are available from John C. McClintock, M.D., 149½ Washington Avenue, Albany 10, New York, U.S.A.

Applications will be received until January 1, 1960.

INTERNATIONAL COLLEGE OF SURGEONS

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Director of Advertising for the International College of Surgeons, announces the appointment of three regional representatives for The Journal of the International College of Surgeons to aid in servicing advertisers and their agencies.

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In Memoriam

LEON GERIN-LAJOIE

M.D., D.Sc., Laval (Hon.) F.R.C.S.(C),
F.A.C.S., F.I.C.S. (Hon.)
1895-1959

Dr. Léon Gerin-Lajoie
D.Sc., F.R.C.S.(C), F.A.C.S., F.I.C.S. (Hon.)

Dr. Léon Gerin-Lajoie, D.Sc., Laval (Hon.) F.R.C.S.(C), F.A.C.S., F.I.C.S. (Hon.), our beloved chief of the Department of Gynaecology at Notre-Dame Hospital, Montreal, Canada, died at the hospital on Sunday, February 15, 1959.

Having been one of his assistants in the Department since 1940 and having had the privilege of his teaching and his guidance during all those years, it is with great pride mingled with deep sorrow that I am recounting his *curriculum vitae*.

Dr. Gerin-Lajoie was professor of gynaecology at the University of Montreal, Faculty of Medicine; chief of the Department of Gynaecology of Notre-Dame Hospital; president of the executive committee of the medical board of Notre-Dame Hospital since 1954; president of the International Federation of Gynaecology and Obstetrics; president-elect of the World Medical Association; member of the Medical Council of Canada, and member of the Medical Advisory Committee of the Cancer Research Society.

Dr. Gerin-Lajoie was born on March 14, 1895, a member of a family long distinguished in the history of Canada.

Educated at Mont St. Louis College and at the University of Montreal, he was graduated from the Faculty of Medicine in 1918. He had received his infantry commission in the C.O.T.C. in 1916, and upon graduation was transferred to the Royal Canadian Army Medical Corps, in which he served until November 1919 as major. He then went to Paris to complete his medical education and to specialize in gynaecology.

Upon his return to Montreal, he continued his interest in that specialty and became one of its leading practitioners. He was founder and the first president of the Society of Obstetricians and Gynaecologists of Canada. He was a past vice-president of the Royal College of Surgeons of Canada, and was president of the Second World Congress of the International Federation of Gynaecology and Obstetrics, held in Montreal during June of 1958.

Dr. Gerin-Lajoie was a member and an honorary member of many scientific societies in Canada and abroad. He contributed about two hundred and fifty papers to the literature of his specialty, some of which he read at medical and surgical congresses, and all of which were published in the leading journals of the profession.

He was recipient of the following medals: for General Services, 1914-1918; Victory, 1918; His Majesty King George V on the occasion of his Jubilee, 1935; His Majesty King George VI on the occasion of his Coronation, 1937, and the Honorary Membership Medal of the Canadian Red Cross Society, 1946.

I beg to extend to Mme. Gerin-Lajoie and the family the heartfelt and respectful sympathy of the officers and members of the Board of Governors of the International College of Surgeons.

Jacques Gauthier, M.D.
MONTREAL

In Memoriam

MAURICE JEAN JOLY
M.D., F.I.C.S

Dr. Maurice Jean Joly, F.I.C.S., of Aubenas, Ardeche, France, died recently at the age of fifty-seven.

Dr. Joly was a valued member of the French Section of the International College of Surgeons since 1955.

He practiced as a general surgeon at the *Hôpital d'Aubenas*, contributed to French surgical literature, and was highly regarded by his associates.

He had been awarded the *Croix de Guerre* twice, and was a Chevalier of the Legion of Honor of France.

Prof. Dr. Raymond Darget, secretary of the French Section of the International College of Surgeons, has conveyed to the family of Dr. Joly the profound condolences of the French Section. We now wish to express the sincere sympathy of the officers and the members of the Board of Governors of the College and join our French colleagues in mourning the passing of our distinguished associate.

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Vol. 31 MAY, 1959 No. 5

General Surgery

Polydirectional Tomography and Its Application to Surgery

C. WANGERMEZ, M.D., F.I.C.S., M. MARTIN, M.D., M. BROUSSIN, M.D.,
J. WANGERMEZ, M.D., P. BONJEAN, M.D., AND M. BISCH, M.D.
BORDEAUX, FRANCE

TOMOGRAPHIC study is becoming more and more widely used as a method of investigation. Tomographic examinations of the lungs are well known, and there is absolutely nothing new to be said on this subject. It is particularly in the domain of the osteoarticular system, especially that of the skull, that important progress is being made every day. The tomographic study of bone has become so important that Dr. Herdner of Bourges, France, has devoted a volume of more than 400 pages to this subject.

Indeed, it is already possible to obtain interesting results with linear movement tomography. In this work, however, we should like to draw attention to the advantages of complex movements in examination of the osteoarticular system.

During the past three years we have had the advantage of possessing in our Central Electro-Radiological Service of the Pelligrin-Tondu Group, Bordeaux, a Sans and Porcher polytome (Fig. 1). This apparatus permits tomographic examination in all positions of the subject, vertical, horizontal and sloping. These sections may be staged millimeter by millimeter from the pressure plane (zero plane) up to 25 cm. above the same. The tilting of the examination plane and that of the effacement device are mechanically integral and operate simultaneously. What-

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From the Central Electro-Radiological Service of the Pelligrin-Tondu Group, Bordeaux (Principal Surgeon, C. Wangermez).

Submitted for publication May 22, [illegible]

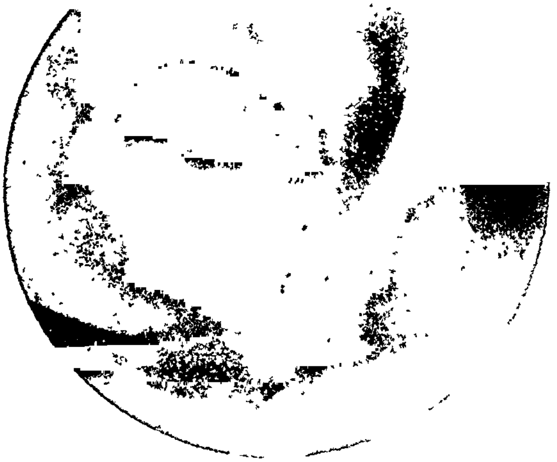

Fig. 11.—*Tomograph of bladder tumor.*

the shoulders can more easily be obtained by transverse tilting.

In this manner, one sees how advantageous it is to be able to orient the trajectory perpendicular to the orientation of the most troublesome elements.

It is extremely interesting to consider the relative distances (tube-section plane-film) in the event that enlargements are necessary. These may be desirable in certain cases of unsatisfactory results or, in other cases, to facilitate definition of the image and better detection of the pathologic abnormality.

On the polytome the distance between the tube and the section plane is invariable. It has been fixed at 110 cm., which is adequate to prevent distortions, yet not exaggerated, so that tomographs of extremely dense regions can be taken.

With most machines, on the contrary, one alters the position of the section plane in relation to the patient, and the tube-film distance is constant. This method has the grave inconvenience of producing an enlargement that becomes larger as the section plane moves nearer to the tube; in consequence, certain normal or pathologic elements take on an abnormal dimensional value.

With the polytome, on the contrary, one can obtain a rigorously constant enlargement, for one alters the position of the patient in relation to an aggregate "tube-section plane-film," of which the relative distances can be maintained constant throughout each examination.

The film-section plane distance is, however, adjustable by continuous movement of the film carrier, which can be easily placed either practically in contact with the examination plane and consequently at the shortest possible distance from the section plane, or far away from the latter.

In the first instance, one obtains the smallest possible enlargement; it will be constant or variable, as desired, according to whether one maintains the film-section plane distance constant, or whether one varies it in proportion to, and in the same direction as, the depth of the section. One can, in this manner, if one so desires, constantly use the shortest possible subject-film distance.

In the second instance, when the film carrier is moved away from the section plane, one obtains a direct enlargement of the image. The distance film-section plane being 110 cm. the maximum enlargement will be to one and a half times the original.

Nevertheless, the blurred effect, due to the penumbra which results from the dimensions of the tube, is accentuated according to the increase of the subject-film distance. It is absolutely essential, therefore to use a very fine focus tube (0.3 by 0.3 mm.) for enlargements, and *it is advisable to choose a double-focus* tube with a revolving anode, 0.3 by 0.3 mm., for the enlargement, and 1 x 1 mm. for the standard technics.

Before the appearance of the polytome, there was no body-section radiographic machine that offered a solution to the

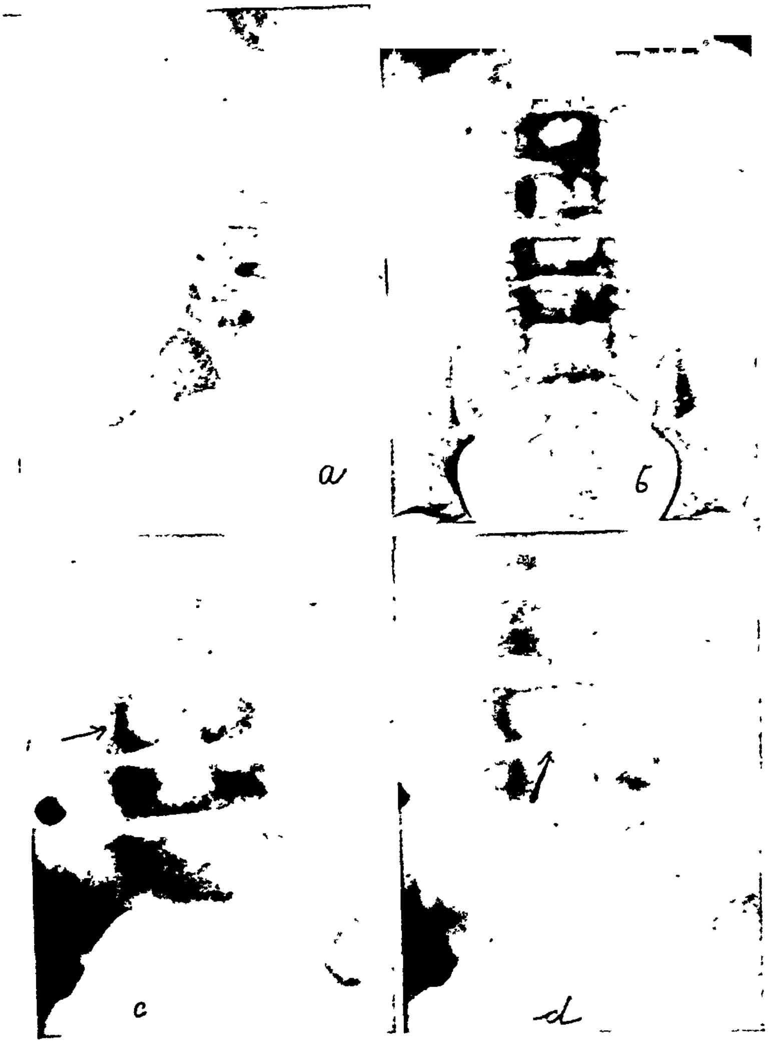

Fig. 12.—Child with Pott's disease. Standard views, *a* and *b*; polydirectional tomographs, *c* and *d*.

problem of oblique sections. When it came to obtaining a tomograph of an object of a certain length that was not parallel to the section plane, it entailed correcting the orientation by inclining the patient, the latter being very difficult to control; up to then, this procedure was the only one suitable for the exploration of the trachea, of the spine in cases of severe lordosis and, above all, of the terminal lumbosacral segment or the sacroiliac joints (anteroposterior view).

An essential principle of section radiographic study demands that the section plane be parallel to the plane of the film; therefore, one needs only to incline the latter in relation to its oscillation axis to obtain a section of equal inclination.

This technic is possible with the polytome. The film carrier is easily inclinable, and a thoroughly accurate reading of the inclination can be taken, which is by no means an unimportant question in

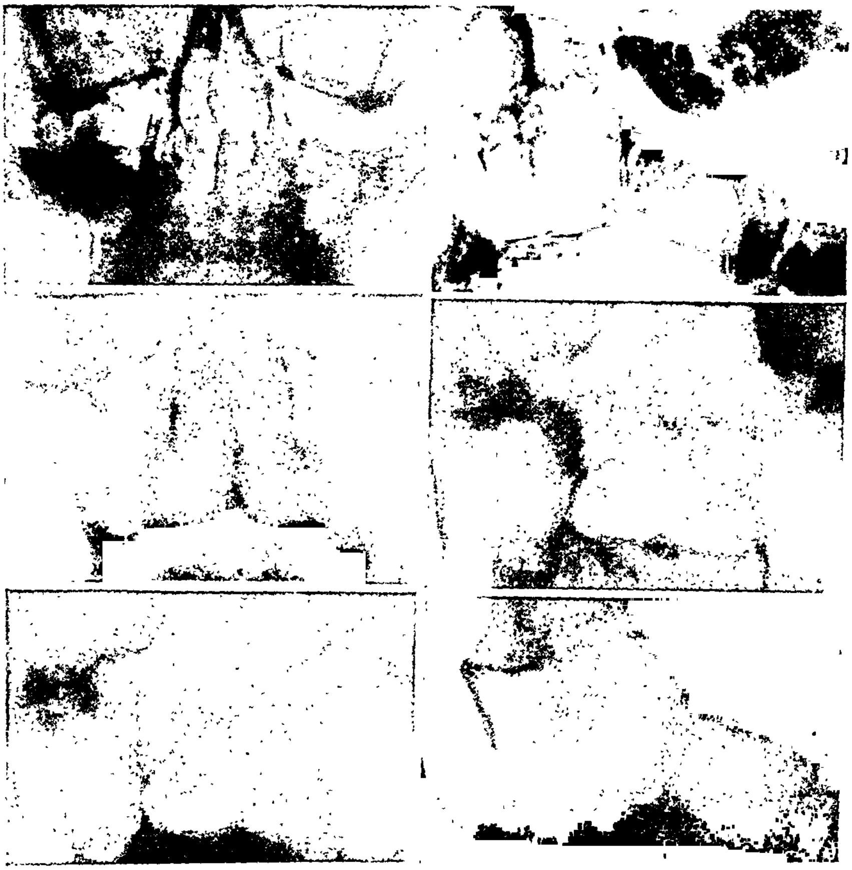

Fig. 13.—Nasopharyngeal polyps. *Above*, standard views; *center* and *below*, polydirectional tomograms.

the event that the examinations must be repeated.

This advantage of the polytome is essential. It facilitates a whole series of technical explorations which, until recently, were, if not impossible, at least extremely difficult to achieve.

Furthermore, should the film carrier come excessively near to the examination plane, a security device is provided that prevents all accidental contact of the film carrier with the examination plane. This device consists of a photoelectric cell fixed to the posterior surface of the examination plane.

The film carrier takes, as necessity requires, the movable antidiffusing screen and 35 by 35, 24 by 30, 18 by 24, and 13 by 18 cassettes. The cassettes of the three film sizes last mentioned are adjustable, following their two principal symmetric axes.

The polytome currently available is not fitted with an antidiffusing screen, which means that it is a little difficult to operate for the denser regions. Nevertheless the films are quite acceptable, provided they are strictly localized.

To illustrate the preceding observations, tomographs of several skeletal regions are presented. With the standard roentgen films these regions are difficult to obtain, yet by polydirectional tomographic means one can obtain some highly worthwhile results. It is obvious that, even with polydirectional tomographic methods employing a linear movement, one can obtain information superior to that given by ordinary roentgenograms, but the parasite trails caused by tilting are often a hindrance to interpretation. These trails completely disappear when complex movements are employed.

The turkish saddle can be easily studied on a standard lateral film; the tomographic technic, however, enables one to separate the right and left clinoids (Fig. 3), and, above all, it makes it possible to study the turkish saddle plane by plane from an anteroposterior position (Fig. 4).

We shall merely mention the temporomaxillary joint, as the advantage of tomographic study is obvious. The absence of linear effacement trails facilitates interpretation of the films (Fig. 5).

Generally speaking, joints may be favorably "tomographed" (Fig. 6). Particular mention must be made, however, of the advantage of tomographic sections in study of the sacroiliac joints (Fig. 7) and the sternoclavicular joints (Fig. 8).

We are not entirely satisfied with our films of the orbit and optical canals (Fig. 9). It is an examination that is rather difficult to make on a living subject. The results are, however, encouraging, and we hope to obtain better films when the polytome is equipped with a mobile screen. For all technical details, we have widely used the information given by the makers.

Finally, tomographic study of the atlas axis and the atloido-occipital joints, employing complex movements, has been described in our previous publications. This method enables us to obtain films of a quality that cannot possibly be acheived by any other current method (Fig. 10).

Purely as a matter of interest, as the chief concern of this work is osteo-articular tomographic study, we present an interesting section of a vesical tumor (Fig. 11) that shows complete disappearance of the image of the probe that was left in position during the radiologic examination.

A series of clinical cases has demonstrated clearly the superiority of polydirectional tomography over the standard films. At present, certainly, it is difficult

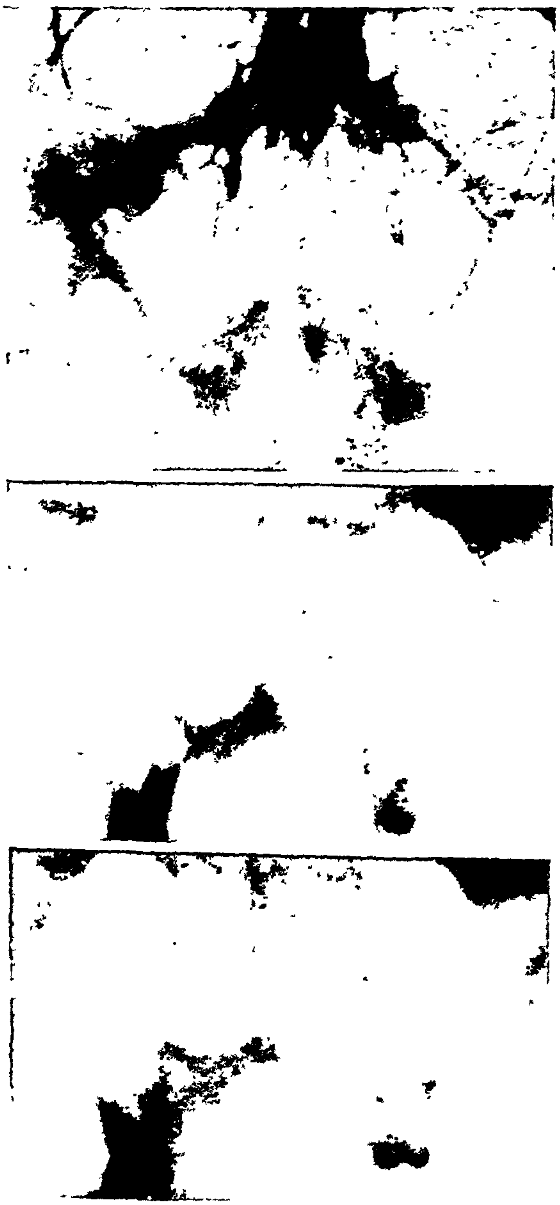

Fig. 14.—Fracture of left superior maxilla. *Above*, standard view; *center* and *below*, tomographic sections.

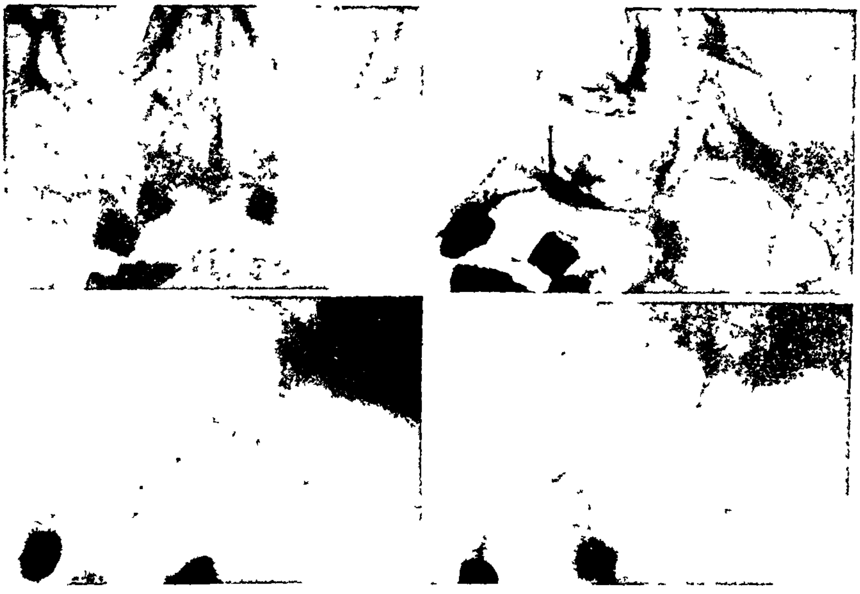

Fig. 15.—Tumor of left superior maxilla. *Above*, standard views; *below*, tomographic sections.

to put into practice for all patients examination methods which are still time-consuming and costly.

It is by no means an exaggeration to say that the technic of taking standard anteroposterior, lateral and oblique films is outmoded if one wants to unearth the diagnosis and, above all, to follow the development of the lesion during and under the influence of different treatments.

The first patient (Fig. 13) is a child with Pott's disease, immobilized for the past two years. This young patient was sent to us for control roentgenograms of the end of the disease. The standard lateral and anteroposterior films show simply a slight haziness of the superior edge of the fifth lumbar and pinching of the fourth and fifth lumbar discs without compression, and with an evidently normal structure. The tomographs of the two lumbar vertebrae (*c, d*) bring to light important destructive lesions in the vertebral segments, appearing with extreme clearness in the form of enormous lacunae. Whereas the standard roentgenograms seem to justify progressive reestablishment of the child's normal life, the tomographs indicate that caution and continued immobilization are essential.

The second case (Fig. 14) is that of a young patient with symptoms of chronic rhinopharyngitis. The standard anteroposterior films (*a*) show a shadow of the right maxillary sinus. This shadow has a clearly defined inner edge, and one might consider this to be a cyst or a polyp. The lateral film (*b*) shows nothing of particular interest.

The polytome tomographs of this young patient show several polyps of the right maxillary sinus (*c, d, e*), of which one is appendant to the superior wall of the maxillary sinus (*f*). One of them, attached to the inferior wall of the sinus (*e*), is inconspicuous on the sections shown.

The third case (Fig. 15) is the result of an everyday accident with trauma at the level of the superficial bones. The standard anteroposterior, lateral and oblique films showed simply a diminution of the air in the left maxillary sinus and a slightly abnormal appearance of the exterior wall of this sinus, which was impossible to determine (*a*). Tomographic sections (*b* and *c*) show clearly that a fracture is present, with depression of the exterior wall of the left maxillary sinus.

The next patient (Fig. 16) had been treated five years earlier for neoplasm of the left part of the vault. Apparently cured for several years, he came back for consultation because he was in pain and because he had had a definite recurrence. Until a few months before his second appearance, he had felt pain on the left only. He has, at present, pain at the level of the right maxillary sinus.

The standard classic anteroposterior film (*a*) shows slight cloudiness of the left maxillary sinus, with a blurred outline of the exterior wall of this sinus. The lateral film (*b*) shows nothing of particular interest; the film taken in the Hirtz position brings to light a haziness of the pterygomaxillary region without being able to indicate the extent of the lesions. A series of tomographic sections enabled us to analyze, plane by plane, the growth of the neoplasm. In this way we noticed destruction of the left palatal vault, of a part of the orbital floor and of the pterygoid process. We have not been able to present, with this article, all the tomographic sections. From these sections we have chosen two that are sagittal and symmeteric in relation to the median plane. On the diseased side (*c*) one sees clearly the destruction of the posterior wall of the maxillary sinus, and the pterygoid process. On the healthy side (*d*), one obtains an image of the pterygoid process that reveals the cause of the pain at the level of the right maxillary sinus. It is a paradental cyst which could, moreover, not have been suspected from the standard anteroposterior film (*a*). In this particular case, only tomographic examination enabled us to study precisely the extent of the bony lesions.

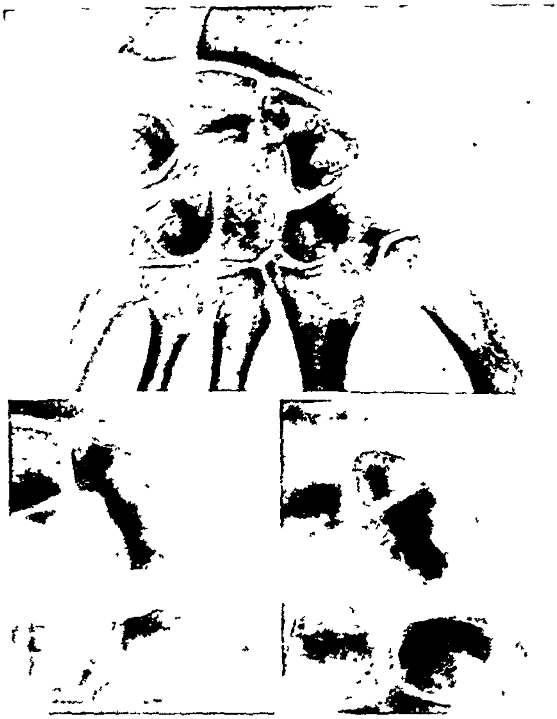

Fig. 16.—Kohler's disease with secondary fracture. *Above*, standard view; *below*, tomographic sections.

Figure 17 was taken in a case of disease of the carpal scaphoid, or Kohler's disease. The patient, who chews tobacco, has used for the past five years an instrument which, it seems, subjects the small wrist bones and, in particular, the scaphoid, to repeated microtrauma. This instrument clearly appears to be the cause of the disease, for we have come across practically identical lesions in the course of a purely scientific examination of a friend of our casualty. We say our casualty, because the patient was sent to us, in effect, because of a trauma that gave rise to a sharp and persistent pain in the region of the wrist. The standard anteroposterior and lateral films of the wrist show a malacic appearance, but it is difficult to say whether or not there is a fracture. One has the impression, however, on the anteroposterior view (*a*) that

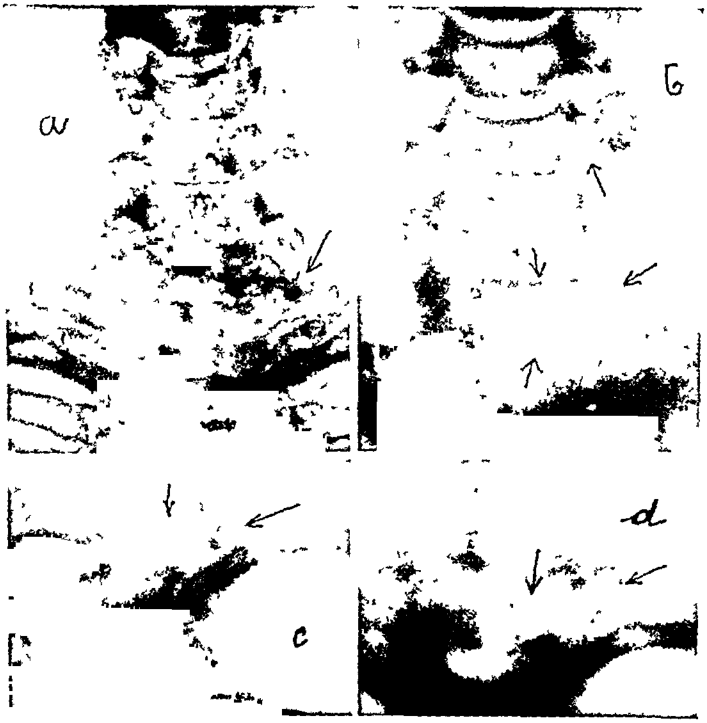

Fig. 17.—Eosinophilic granuloma. Standard view, *a*; tomographic sections, *b*, *c* and *d*.

there is a connecting fluid. The tomographic sections (*b* and *c*) clearly bring to light the scaphoid lacunae and the secondary fracture (*c*).

In the last but one case illustrated (Fig. 18) the patient underwent an operation for a tumor of the spinous process of the axis. Histologic examination has shown that it seemed to be an eosinophilic granuloma. In any case, the patient has remained entirely cured since the operation, and the local condition is perfect. This patient came back, however, for consultation because she had a recurrence of pain in the cervical column, particularly in the cervicodorsal region. A series of examinations revealed two new diseased localizations, one at the level of the seventh cervical vertebra, and the other at the level of the fifth. The standard lateral view showed absolutely nothing abnormal. This is understandable on examination of the tomographs, which bring to light the fact that the lesions are unilateral. On the anteroposterior roentgenogram (*a*) one suspects a localization on the seventh cervical vertebra, but the localization on the fifth cervical passes completely unnoticed. The tomographic sections show not only the damage to the fifth cervical vertebra (*b*) but the extent of the damage to the seventh (*b*, *c*, and *d*), of which the left part seems to be entirely destroyed.

The final case is that of a person stricken with osteomyelitis of the upper end of the tibia. The standard views (*a* and *b*) show the lesion, but only the tomographs (*c* and *d*) enable one to make a complete analysis. It follows from the cases illustrated, as we have already said, that the standard views are outmoded. These standard views, which are increasingly utilized by everyone, enable one,

Fig. 18.—Ostoemyelitis of upper extremity of tibia. Standard views, *a* and *b*; polydirectional tomographs, *c* and *d*.

certainly, in the majority of cases, to make an approximate diagnosis; but when it comes to following the evolution of an osteoarticular lesion, or defining its extent with the accuracy required for a specialist's report, tomographic sections are indispensable. The polydirectional tomographic technic results, as far as the osteoarticular system is concerned, in clearer images than ever before, because of the complete disappearance of all effacement trails. This does not mean that, in certain cases, longitudinal movements will not give satisfactory results. It is precisely because longitudinal movements are sufficient for pulmonary examination that tomographic study has become current practice in making a complete estimation of the lesion and in following its subsequent course. In our opinion the qualified roentgenologist is in duty bound, as a specialist, to favor the osteoarticular system increasingly with a method that has proved itself in phthisiologic practice and is capable of providing, in the roentgen diagnosis of bone diseases, a precision that has heretofore been lacking.

RESUMEN

Se describen las ventajas para el cirujano de el estudio tomográfico polidiseccional en comparación con la técnica linela simple. Se trata de un trabajo basado en estudios hechos en el Servicio de Electrorradiología del Grupo Pelligrin-Tondu de Burdeos. Se describen la técnica y el aparato, un politomo Sans y

Porcher. Una de sus grades ventajas quirúrgicas es que permite tanto las proyecciones oblicuas como las paralelas al plano de sección: El trabajo va ilustrado con diversas tomografías incluyendo estudios clínicos del mal de Pott, rinofaringitis crónica, traumas óseos superficiales, neoplasias de la parte izquierda de la bóveda, enfermedad de Köhler, osteomielitis del extremo superior de la tibia y un tumor de la apófisis espinosa del axis que semeja un granuloma eosinófilo.

ZUSAMMENFASSUNG

Die für den Chirurgen wichtigen Vorteile tomographischer Untersuchungen in mehreren Richtungen im Vergleich mit der gewöhnlichen linearen Technik werden beschrieben. Die Untersuchungen wurden in der Röntgenabteilung der Pelligrin-Tondu-Gruppe in Bordeaux ausgeführt. Das Polytom von Sans und Porcher wird beschrieben und die Technik seiner Anwendung erklärt. Ein wichtiger Vorzug vom chirurgischen Standpunkt wird in der Tatsache gesehen, dass man Schnittaufnahmen sowohl in schräger Richtung als auch parallel zur Schnittebene machen kann. Erläuternde Tomogramme sind beigefügt und umfassen klinische Untersuchungen der Wirbeltuberkulose, der chronischen Rhinopharyngitis, oberflächlicher Knochenverletzungen, einer Neubildung der linken Hälfte des Schädelgewölbes, Köhlerscher Krankheit, der Osteomyelitis des proximalen Endes des Schienbeines und einer Geschwulst des Dornfortsatzes des zweiten Halswirbels, die offenbar ein eosinophiles Granulom darstellte.

SUMARIO

Descreve as vantagens do estudo tomografico polidirectional para o cirurgiao em comparaçao com a tecnica linear baseado no estudo feito no Serviço Electro-Radiologico do Pelligrin-Tondu Group em Bordau. Descreve o aparelho e a tecnica usados. A vantagem maior e que possibilita o estudo das secçoes obliquas e das paralelas aos plano da secçao tomografica. Ilustra com tomogramas e estudos clinicos sobre o mal de Pott, a rinofaringite cronica, os traumas superficiais dos ossos, os neoplasmas, a molestia de Kohler, a oseteomilelite da terço superior da tibia e do tumor sa apofise espinhosa do axis simulando um granuloma eosinofilo.

RÉSUMÉ

Les avantages que présente pour le chirurgien l'étude tomographique polydirectionnelle par rapport à ceux de la technique linéaire sont décrits sur la base d'une étude faite par les auteurs dans le Service électro-radiologique du Groupe Pellegrin-Tondu à Bordeaux. L'appareil utilisé, un polytome Sanz et Porcher, est décrit et sa technique d'application expliquée. Il comporte un grand avantage chirurgical du fait qu'il permet l'étude de sections obliques aussi bien que parallèles au plan de section. Des tomogrammes illustrent les études faites par les auteurs comprenant des cas cliniques sur le mal de Pott, les traumatismes osseux, les polypes du pharynx, les néoplasmes des sinus de la face, la maladie de Köhler-Mouchet, une ostéomyélite de l'extrémité supérieure du tibia et une tumeur de l'apophyse épineuse de l'axis qui était un granulome éosinophile.

Immediate Postoperative Complications of Partial Gastrectomy

J. C. GRANT, M.B.Ch.B., F.R.C.S.E., F.R.F.P.S.*

GLASGOW, SCOTLAND

The immediate postoperative progress of a consecutive series of 240 patients who underwent partial gastrectomy for peptic ulceration has been studied. There were 5 deaths in the series. The causes, management and prevention of the complications encountered are discussed. Leaks from the duodenal stump and the anastomosis and postoperative hemorrhage were the commonest serious complications. The survey shows that some of the complications were due to errors of technic or postoperative care and that the mortality rate could be reduced to 1 per cent.

PARTIAL gastrectomy for peptic ulceration carries a mortality rate of 2 to 3 per cent. This is a high mortality for treatment of a nonmalignant condition. Must this situation be accepted, or are some of the deaths due to postoperative complications that should have been prevented or more efficiently treated? To answer this question the immediate postoperative period was studied in a group of patients who had undergone partial gastrectomy for peptic ulceration.

Material.—A consecutive series of 240 patients on whom partial gastrectomy was performed for peptic ulceration in one surgical unit of the Victoria Infirmary, Glasgow, between March 1950 and October 1954, has been investigated. The sex of the patients and the location of the ulcers are shown in Table 1. A Polya type of gastrectomy was performed on 231 patients, a Billroth I gastrectomy on 8 and a sleeve resection with gastroenterostomy on 1. Subdiaphragmatic vagotomy was performed in addition on 11 patients. Two hundred and twenty-nine operations were elective procedures. There were 2 deaths in the emergency group and 3 in the elective group—an overall mortality rate of 2.1 per cent. The average age of the patients was 45.3 years, with a range of 18 to 75 years.

Results.—The complications that occurred are listed in Table 2.

Hemorrhage.—Five patients had severe bleeding after operation. The definition of this condition is not easy, as many patients have some bleeding from the anastomosis during the first twenty-four hours after the operation. The amount of blood loss by the 5 patients was sufficiently great to consider and, in 3 instances, to justify infusions of whole blood. Bleeding occurred within twenty-four hours of the operation in 3 patients, thirty hours after the operation in 1 patient and on the sixth postoperative day in 1. The abdomen of 1 patient was reopened, as spontaneous arrest of the hemorrhage did not occur.

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TABLE 1.—*Location and Sex Distribution of Ulcers*

Ulcer	*Duodenal*	*Gastric*	*Stomal*	*Duodenal & Gastric*	*Duodenal & Esophageal*	*Total*
Male	151	31	12	8	1	203
Female	15	18	3	1	0	37
Male & Female	166	49	15	9	1	240

TABLE 2.—*Complications*

Complication	*Number*	*Deaths*
Hemorrhage	5	0
Duodenal or anastomotic leaks	11	3
Subphrenic abscess	1	0
Subhepatic abscess	1	0
Intestinal obstruction	1	0
Paralytic ileus	1	0
Wound rupture	3	0
Pancreatitis	1	0
Stomal ulcer	1	1
Bilious vomiting	3	0
Jaundice	3	0
Diarrhea	17	0
Tuberculous bronchopneumonia	3	0
Inhalation pneumonia	1	0
"Postoperative" thoracic infection	30	0
Pulmonary infarct	2	0
Vasovagal attack	1	1
Retention of urine	2	0

collected series of 973 patients who had undergone partial gastrectomy. In his series bleeding occurred between the second and the fourteenth postoperative day and arose from the anastomotic line in 13 patients and from duodenal ulcers left *in situ* in 2. In some cases of the series here reported the gastric vessels on the cut surface of the gastric remnant were individually ligated before the anastomosis was performed, and the impression was formed that those patients had less postoperative bleeding; none of them bled severely. Even with the most careful technics, however, postoperative hemorrhage will occasionally occur. If the complication is recognized early and is adequately treated, the danger to the patient is slight. The diagnosis is obvious if the patient vomits blood or if blood is aspirated from an indwelling Ryle's tube; occasionally blood does not enter the stomach, and a rapid pulse rate and a falling blood pressure are the only signs of hemorrhage. Early recognition of the accident is vitally important. If the hemorrhage is severe, whole blood should be infused promptly, and if bleeding persists a laparotomy should be performed before the patient's condition deteriorates.

Leakage.—A leak from the duodenal stump or from the anastomosis is the commonest fatal complication after partial gastrectomy (Payne, 1936; Glen and Harrison, 1951; Golicher and his co-workers, 1956). Eleven patients in this series showed evidence of such leaks. In 4, a spontaneous discharge of bile-stained fluid from the wound was the first and only sign; in each of those patients this occurred within fourteen days of the operation and the discharge stopped spontaneously within five weeks. The condition was more serious in the remaining 7 patients.

CASE 1.—In the case of J. D., a man aged 37, an antecolic Polya gastrectomy was performed for a duodenal ulcer. Pain and tenderness developed in the right hypochondrium on the seventh postoperative day; this persisted, and the abdomen was reopened on the ninth postoperative day. There was a collection of bile-stained fluid in the right hypochondrium that was thought to have come from the duodenal stump, but the leak had sealed. The abdomen was closed, with drainage of the duodenal stump area. The patient made a satisfactory recovery and was discharged from the hospital on the thirty-fourth postoperative day.

CASE 2.—W. H., a man aged 61, underwent an antecolic Polya gastrectomy for a gastric ulcer. During the closure of the duodenal stump a suture cut through and tore the wall of the duodenum; the tear was repaired with additional sutures. On the third postoperative day pain and tenderness developed in the right hypochondrium. The patient's condition deteriorated, and his abdomen was reopened on the following day. The duodenal stump had leaked; duodenal contents had spilled into the general peritoneal cavity, and there was diffuse peritonitis. The duodenal stump area was drained, and continuous gastric suction and intravenous replacement of fluid and electrolytes were commenced. The peritonitis persisted, and the fistula discharged large quantities of duodenal contents. The patient died on the thirteenth postoperative day.

CASE 3.—In the case of W. G., a man aged 67, an antecolic Polya gastrectomy was performed as an emergency procedure for a bleeding gastric ulcer. After completion of the anastomosis it was noticed that the distal half inch of the gastric remnant was pale. On the fourth postoperative day the pulse rate and temperature were elevated, and the patient was obviously not well, though there were no definite abnormal abdominal signs. His condition deteriorated, and he died on the ninth postoperative day. Autopsy revealed a leak from the posterior wall of the anastomosis and diffuse peritonitis.

CASE 4.—A Billroth I gastrectomy was performed on A. T., a man aged 39, for a duodenal ulcer. Forty-eight hours after the operation severe abdominal pain occurred, associated with boardlike rigidity of the abdominal muscles. The abdomen was reopened two hours later, and a leak from the anterior surface of the anastomosis was observed. The anastomosis was undone; the duodenum was closed, and an antecolic Polya type of anastomosis was performed. The patient made an uneventful recovery and was discharged from the hospital on the forty-second day.

CASE 5.—J. T., a man aged 61, underwent an antecolic Polya gastrectomy for a duodenal ulcer. There was a reversed rotation of the intestine; the third part of the duodenum passed behind and the transverse portion of the colon in front of the superior mesenteric vessels, and the duodenojejunal flexure was adherent to the posterior wall of the right iliac fossa. The duodenojejunal flexure was mobilized as much as possible to allow the first jejunal loop to be brought up to the gastric remnant for the anastomosis, but the superior mesenteric vessels limited this mobilization. Pain and tenderness developed in the right hypochondrium on the third postoperative day; the patient's condition deteriorated, and on the seventh postoperative day the abdomen was reopened. His condition was so poor that local anesthesia was used and an extensive exploration was impossible. There was diffuse peritonitis, and the contents of the abdomen were adherent. A leak from the duodenal stump was considered the most likely lesion, though the duodenal stump was not seen. The duodenal stump area was drained and a jejunostomy performed. At no time was there bile in the discharge from the wound, in the gastric aspirations or from the jejunostomy. The paralytic ileus, which had been present before the second operation, persisted, and the patient was unable to retain jejunostomy feedings. He died on the fourteenth postoperative day. Autopsy showed that there had been a leak from the posterior wall of the anastomosis. In addition, the abnormally placed third part of the duodenum was completely obstructed by the afferent jejunal loop as it ran from its fixed point in the right lower quadrant of the abdomen to the gastrojejunal anastomosis. The proximal portion of the duodenum was enormously distended; it contained about 2 pints of bile. The duodenal stump was intact.

CASE 6.—J. G., a man aged 34, underwent an antecolic Polya gastrectomy for a stomal ulcer after a gastroenterostomy had been undone. Pain and tenderness developed in the right hypochondrium on the seventh postoperative day. A duodenal leak was suspected but by the following day the condition had settled and no special treatment was given. On the twentieth postoperative day the patient had fever, and there was radiologic evidence of a subphrenic abscess. The abscess was drained. The patient eventually recovered and was discharged from the hospital on the seventy-fourth postoperative day.

CASE 7.—An antecolic Polya gastrectomy was performed on J. G., a man aged 44, for a large chronic duodenal ulcer that was penetrating the head of the pancreas. The pyloric antrum was left *in situ* after its mucosa had been removed. (This procedure was adopted only twice in the series.) On the third postoperative day a small amount of bile-stained fluid was discharged from the wound. A small leak from the duodenal stump was diagnosed. The discharge persisted, but as the amount was so small and the patient's general condition so good he was allowed to go home on the twenty-eighth postoperative day. Five weeks later, however, he was readmitted, with epigastric discomfort, fever and loss of appetite. There was a collection of pus in the wound, which subsequently discharged for a few days. A firm swelling could be palpated in the epigastrium, which was thought to be an inflamed pancreas. No biochemical investigations were done to confirm this diagnosis. The patient's appetite gradually returned, and after five weeks he went home in good health.

Several factors, singly or in combination, may be responsible for a leak from the duodenal stump or the anastomosis. Visick (1948) stated bluntly that "a leak from the duodenal stump is due to faulty suturing." Obstruction at the gastrojejunal anastomosis or at some point in the afferent loop is often blamed for the rupture of a duodenal stump (Aird, 1949; Tanner, 1951). Case 5 was the only patient in this series with obvious obstruction of the duodenum, but the duodenal stump suture line did not give way and the stump healed in spite of great distention—and this in a poorly nourished patient who was dying of peritonitis. Minpriss and Birt (1948) described 2 instances of distention of the afferent loop and Henson (1955) discussed 1 instance of the same condition and expressed the opinion that the duodenal stump would have ruptured but for timely intervention. Those patients and Case 5 of this series, far from supporting the thesis that distal obstruction is a cause of rupture of a duodenal stump, demonstrate that a duodenal stump can remain intact in the presence of distal obstruction. If the stump is insecure or has already ruptured, distal obstruction will of course aggravate the condition and will prejudice the spontaneous closure of an established fistula.

Acute pancreatitis occurs occasionally after partial gastrectomy, and it is associated, sometimes, with a duodenal fistula, (Case 7); but it is always difficult to know whether the duodenal leak precedes or follows the pancreatitis. There seems to be no single etiologic factor to account for postoperative pancreatitis, but damage to the pancreatitic head or the duct of Santorini (which in 10 per cent of patients is the main pancreatic duct (Millbourn, 1955, cited by Wapshaw, 1956)) is probably the most common cause. Cases have been reported in which pancreatitis followed gastroenterostomy (Warren, 1951), and in Case 7 of this series the duodenum and the pancreas were not interfered with.

There was suggestive evidence in 3 of the patients in this series (Cases 2, 3 and 4) that the fault was ischemic necrosis. It is difficult to devascularize a stomach, though Rutter (1953) has reported a case in which it happened, and the anastomotic leak in Case 3 was probably due to this cause. The lesion in Case 4 was seen at operation soon after perforation had occurred, and the appearance was consistent with ischemic necrosis. In Case 2 the additional sutures that were necessary to repair the longitudinal tear of the duodenal wall probably impaired the blood supply of that corner of the cut edge of the duodenum. The duodenum has a good intramural blood supply, and usually it can be extensively mobilized without risk of ischemia. When there is a large posterior duodenal ulcer penetrating the head of the pancreas, the posterior wall to the duodenum distal to the ulcer is intimately adherent to the pancreas, and extensive mobilization may damage the pancreatic or bile ducts if the mobilization is carried out on too deep a plane. If it is carried out on too superficial a plane, the blood supply of the duodenum may be compromised. In such circumstances it is much safer to limit the mobilization and rely on an accurately placed single layer of sutures for closure of the duodenal stump. When it is possible to use a two-layer method of closure, care must always be taken lest they cut through and cause damage to the duodenal wall. It is not always the "difficult" duodenal stump closure that leaks. In this series 4 of the 8 patients who had leakage from the duodenal stump had chronic posterior penetrating duodenal ulcers, but 2 had gastric ulcers, 1 a stomal ulcer and 1 a healed duodenal ulcer.

The cause of the leak from the anastomosis in Case 5 was tension on the suture line due to the abnormal site of the duodenojejunal flexure. Mishaps after partial gastrectomy in patients with malrotation of the intestine have been previously reported (Brine and Fraser, 1956; Moretz, 1949). The usual Polya type of anastomosis may be impossible when a malrotation of intestine exists. In such circumstances it is a wise precaution to decide, before performing a partial gastrectomy, whether a gastrojejunal anastomosis will be possible. A Billroth I anastomosis will usually be more satisfactory.

There was no obvious reason why leaks developed in the other 7 patients. The suturing was always done carefully, and faulty suturing is an unlikely explanation. It is much more likely that a portion of the intestine had been made ischemic by faulty mobilization.

The signs and symptoms of a leaking duodenal ulcer have been described by Larcen and Foreman (1951), who said that "pain in the right upper region of the abdomen which is severe, constant and nonradiating associated with tenderness and moderate muscle spasm and accompanied with a progressive rise in the temperature and pulse occurring most frequently three to six days after gastric resection is the syndrome of the leaking duodenal stump." Four of the patients in this series may have had those signs and symptoms, but they escaped notice, and the condition was not diagnosed until the duodenal contents were discharged through the abdominal wound. In 6 patients (Cases 1, 2, 3, 4, 5 and 6) the clinical picture agrees more or less with Larcen and Foreman's description, though the signs and symptoms in Case 4 were more sudden and dramatic and in Case 3 pain was not a feature. Slight tenderness in the right upper quadrant of the abdomen is difficult to assess, because of the proximity to the recent wound; when present it should never be treated lightly, and the abdomen should be examined after all dressings have been removed.

There are three possible consequences of a leak from the anastomosis or the duodenal stump: 1. A localized collection forms, the perforation closes and the collection is reabsorbed. (This probably occurs frequently without being diagnosed.) 2. The duodenal contents track to and are discharged through the abdominal wound. (In this series there were 4 instances of this occurrence.) 3. The contents track elsewhere and form: (a) a localized abscess, e.g., a subphrenic abscess (Case 1), or (b) diffuse peritonitis (Cases 2, 3 and 5). The paralytic ileus invariably associated with diffuse peritonitis prevents the upper intestinal contents from passing downward in the normal way, and they overflow through the fistula into the general peritoneal cavity and aggravate the peritonitis. The patient may die from the toxemia of peritonitis long before the loss of the duodenal contents has become a serious problem (Cases 2 and 3).

The treatment of a leak must aim at preventing the spread of duodenal or gastric contents through the abdominal cavity. This can be done by closing the fistula or diverting the discharge to the surface. As it is impossible to predict which patient will deal adequately with the complication without help, an early laparotomy would seem to be the safest and best course to adopt. Furthermore, soon after the leak has occurred the general condition of the patient is usually good, and he is better able to withstand the effects of an operation than he will be two or three days later. Unfortunately the signs and symptoms are seldom as dramatic as they were in Case 4. The mildest signs should be sufficient indication for a laparotomy, which should be performed under a general anesthetic to allow thorough exploration of the abdominal cavity, should this be necessary. In Case 5 the duodenal stump area was drained four days after the first signs of a leak, using local anesthesia. At autopsy it was observed that the leak was from the posterior wall of the anastomosis. If this patient's abdomen had been explored within twenty-four hours of the first sign of a leak, the final outcome might have been different. The practice adopted by some surgeons (Hosford, 1949; Schmitz and his associates, 1954) of draining the duodenal stump area after all gastrectomies or after those in which a leak is considered likely, allows the contents to come to the surface if a leak occurs, prevents contamination of other parts and brings the accident to immediate notice. If there is any doubt about the duodenal closure, this seems a worth-while safety measure. Hosford (1949) reported a personal series of 200 partial gastrectomies for peptic ulceration with only 1 death, and he drained the duodenal stump area in all doubtful cases. The drain may be brought through the upper part of the epigastric wound or through an independent stab wound in the right hypochondrium.

Postoperative Pulmonary Complications.—In 1936 Payne noted that pulmonary infections were the second commonest cause of death after partial gastrectomy. Most postoperative pulmonary complications encountered today are not regarded as serious conditions. This change in outlook is attributed to the change in anesthesia, the use of antibiotics and the early mobilization of the patient (Kursweg, 1954). In the series here presented there were 34 patients in whom postoperative respiratory infections or atelectasis developed. These patients were instructed in breathing exercises and were given a course of intramusclar penicillin. Thirty improved rapidly and gave no cause for anxiety. One patient, who had vomited while coming out of anesthesia and had inhaled gastric material, developed inhalation pneumonia of all three lobes of the right lung; five weeks elapsed before the condition resolved. Three other patients failed to respond to treatment; radiologic and bacteriologic investigations showed that they had acute tuberculous bronchopneumonia. In 7 other patients pulmonary tuberculosis subsequently developed. This incidence of 10 out of 240 patients (4.2 per cent) is similar to that observed in another Glasgow series, in which 16 out of 418 patients (3.8 per cent) had pulmonary tuberculosis following partial gastrectomy for peptic ulceration (Anderson and others, 1955). There are now many reports of pulmonary tuberculosis developing after partial gastrectomy. The high incidence of this complication in the present series probably reflects the high incidence of pulmonary tuberculosis in the Glasgow area. The literature on the subject deals with the development of pulmonary tuberculosis months or years after a partial gastrectomy has been performed. Warthen (1953), however, had 2 patients in whom acute pneumonic tuberculous lesions developed within three months of the operation. The 3 patients in the present series in whom acute tuberculous bronchopneumonia developed in the immediate postoperative period had a barium meal examination within six weeks of their operations: this included screening of the chest, and tuberculosis was not then detected. It is well known that partial gastrectomy is an unsuitable operation for a patient with pulmonary tuberculosis. Furthermore, the experience in this series shows that reliance cannot be placed on screening of the chest alone and even a normal radiograph does not necessarily mean that no pulmonary tuberculosis is present (Thorn and others, 1956). When presented with the problem of treating a patient who has pulmonary tuberculosis and peptic ulceration, the surgeon should perform partial gastrectomy only as a last resort. For duodenal ulceration vagotomy and gastroenterostomy are preferable, but there are patients who will require gastrectomy; for example, a patient with a chronic gastric ulcer which has failed to respond to medical treatment. Before surgical treatment is carried out, a preoperative period should be spent in a sanatorium with the administration, if necessary, of the antituberculous antibiotics. No patient with pulmonary tuberculosis would ever be subjected to pneumonectomy, lobectomy or thoracoplasty without prolonged preoperative preparation. The possibility of a flare-up of pulmonary tuberculosis exists when operations on other organs are performed, as was demonstrated recently in this surgical unit. An elderly man was admitted with a strangulated femoral hernia; he was operated upon, local anesthesia being used, and during the immediate postoperative period acute tuberculous bronchopneumonia developed from which he died three months later. This man had suffered from "chronic bronchitis" for years. He had, no doubt, chronic pulmonary tuberculosis, and the strangulation of the femoral hernia and the subsequent operation to deal with it were sufficient to upset the balance between the tubercle bacilli and the host.

In each of 2 patients in the series a pulmonary infarct developed. Neither infarct was large, and the patients both made uneventful recoveries.

Vasovagal Attack.—One patient, a man aged 39, was treated by an emergency Polya gastrectomy for severe bleeding from a duodenal ulcer. His condition throughout the operation was good, and on its completion he was given 1 mg. of prostigmine, preceded by 1/100 gr. of atropine, to counteract the effect of the relaxant drugs that had been used. Thirty minutes later his heart stopped. The abdomen was reopened, and cardiac massage through the diaphragm was initiated. The heartbeat returned for a short time, but the patient ultimately died. Postmortem examination revealed no abnormality. Cardiac arrest after the administration of atropine and prostigmine has been previously reported (Macintosh, 1949; Lawson, 1956), but the mechanism is not clear. Macintosh suggested that when the two drugs are given together the vagus-stimulating effect of prostigmine may occur before the vagus-blocking effect of atropine takes place, and Lawson suggested that, initially, atropine stimulates the vagus. Pooler (1957) has suggested that the administration of atropine to a patient with a carbon dioxide buildup may cause vagal stimulation. The cardiac arrest occurred in this patient thirty minutes after the administration of atropine and prostigmine. It seems likely that vagal stimulation was the cause of the sudden cardiac arrest, but the stimulant is not known and there is no incriminating evidence against either atropine or prostigmine.

Retention of Urine.—In 2 patients there was postoperative retention of urine, which was due to prostatic enlargement. In both, catheterization was required for a few days, and a prostatic resection was performed on 1 a year later. Retention of urine can be a troublesome complication, but it may be eliminated to a certain extent by diagnosing prostatic enlargement and, if necessary, performing prostatectomy, before embarking on partial gastrectomy.

Postoperative Vomiting.—Four patients suffered from this complication. Two of them vomited small quantities of bile at irregular intervals during the immediate postoperative period, but the vomiting ceased within fourteen days. A female patient who had undergone a Billroth I gastrectomy combined with subdiaphragmatic vagotomy performed for a duodenal ulcer vomited copious quantities of gastric contents for three months. This particular operation is notorious for producing gastric retention; it is doubtful that it is ever justified. The fourth patient, a man aged 50, in whom a Polya gastrectomy was performed for a duodenal ulcer developed paralytic ileus which persisted for nine days. He was treated by continuous gastric suction and intravenous replacement of fluids and electrolytes. This patient is of interest in that he was the only one in the series with this complication, which Ebrill and Naptilin (1953) encountered in 10 per cent of their patients on whom gastrectomy was performed for peptic ulceration. These authors considered the condition due to a sodium-potassium imbalance. They suggested that it is likely to occur if: (1) there is a potassium deficiency of 125 to 150 milliequivalents, (2) the depletion occurs within forty-eight hours and (3) there is a sodium-potassium imbalance of at least 300 milliequivalents. Loss of potassium from the urine is increased for the first few days after the operation (McPhee, 1953) and there is additional loss of potassium from gastric aspiration. If during this period the patient is given considerable quantities of intravenous saline solution, the three conditions aforementioned will often be fulfilled. In this series the standard postoperative regime consisted of a slow intravenous infusion of 5 per cent dextrose in water for twelve to twenty-four hours (a total volume of 1 to 1.5 liters would be given). Thereafter the patient was allowed sips of water, milk was given on the second postoperative day and a light diet was begun on the third postoperative day. Such a regime is unlikely to produce a sodium-potassium imbalance, and therefore the small incidence of paralytic ileus in this series supports the suggestions of Ebrill and Naptilin. It is difficult to believe, however, that sodium-potassium imbalance is the only factor responsible for this type of postoperative ileus. Peritonitis, or even handling of the bowel, can cause a similar condition. Furthermore, in the past, before the importance of potassium deficiency was appreciated, patients have recovered from paralytic ileus after many days of gastric aspiration and intravenous fluid and electrolytic replacement that did not include any potassium; those patients must have had gross sodium-potassium imbalance. Perhaps, in some patients, the intestine is susceptible to electrolytic imbalance. Provided there is no deficiency of fluid and electrolytes when the patient is operated upon, there is no need for enthusiastic intravenous therapy. Indeed, Wilkinson (1956) has shown that patients make an uneventful recovery from partial gastrectomy when no fluids at all are given in the first forty-eight hours.

Diarrhea.—Seventeen patients had postoperative diarrhea, but none was seriously ill. The feces were not examined for organisms. *After gastrectomy the incidence of* the severe type of enterocolitis is low. Dawson-Edwards and Morrisey (1955), in a series of 1,700 patients on whom a partial gastrectomy was performed for peptic ulceration, encountered the severe type of enterocolitis in only 8, an incidence of 0.5 per cent. It is not surprising, therefore, that in this series of 240 patients the severe type was not encountered. Each of the 17 patients had three or four loose bowel movements in the first postoperative week. It is impossible to say whether this is a mild form of the enterocolitis that is so often fatal or an entirely different condition. Howie and his co-workers (1953) demonstrated Clostridium Welchii and

Welchii alpha toxin in gastric aspirations from patients who had undergone partial gastrectomy. According to Todd and Hope (1955), postgastrectomy diarrhea is caused by an antibiotic-resistant Staphylococcus aureus, the sole surviving organism in the bowel after the patient has had a course of treatment with one of the broad spectrum antibiotics or a combination of penicillin and streptomycin. Cook and his co-workers (1957) cultured Staph. aureus from the feces of 21 out of 30 patients with severe diarrhea that had followed antibiotic therapy. The evidence against antibiotic-resistant staphylococci is sufficiently strong to make one cautious about the indiscriminate use of antibiotics.

Stomal Ulcer.—Report of a Case: A diabetic woman aged 50 vomited persistently three months after a gastroenterostomy had been performed for a duodenal ulcer from which she had suffered for twenty years. Laparotomy revealed a stomal ulcer with extensive fibrosis extending from the transverse mesocolon round the transverse colon and onto the anterior abdominal wall. The anastomosis was undone and a posterior Polya gastrectomy performed. Within a week vomiting had recurred, and a further laparotomy revealed a stomal ulcer with extensive fibrosis, which was partially obstructing the stoma and the transverse colon. The gastric remnant was opened through its anterior wall to allow digital examination of the stoma and an enteroenteroanastomosis between the afferent and efferent loops was performed. The patient died seven days later from peritonitis caused by a leak from the gastrotomy wound.

Stomal ulceration with such extensive fibrosis and so soon after partial gastrectomy is uncommon. The untimely death of this patient solved the problem of treatment, for the enteroenteroanastomosis would have relieved the obstruction only temporarily if the fibrous tissue reaction had persisted and extended.

Subhepatic Abscess.—Report of a Case: A woman aged 49 years underwent a Polya gastrectomy for a large gastric ulcer that had penetrated the pancreas and the inferior surface of the liver. The stomach was removed from the ulcer base, which was not disturbed. On the eighth postoperative day there was a purulent discharge from the wound, which settled within a week. Subsequently a mass developed in the upper part of the abdomen, and on the thirtieth postoperative day the abdomen was reopened and a large subhepatic abscess was drained. Thereafter the patient's progress was uneventful, and she was allowed to go home on the forty-ninth postoperative day. The assumption, and it seems a reasonable one, is that the abscess was caused by organisms in the ulcer base. Two procedures are worth considering when an ulcer base is exposed: (1) cauterization of the ulcer bed and (2) drainage of the abdomen.

Intestinal Obstruction.—Report of a Case: A Polya gastrectomy was performed on a youth aged 19 for a duodenal ulcer. On the second postoperative day the patient complained of abdominal pain, which was associated with vomiting. The vomiting persisted, and at the time the condition was thought to be paralytic ileus; in retrospect the diagnosis of obstruction of the small bowel was obvious. On the eleventh postoperative day laparotomy was performed; the small bowel was obstructed at about its midpoint by an adhesion between the greater omentum and the small bowel; the bowel had rotated round this fixed point, and at the point where the adhesion crossed the bowel the lumen was completely obstructed.

Such an accident as this occasionally occurs after a laparotomy, and the diagnosis is not usually difficult; but with this patient a diagnosis of paralytic ileus was made, chiefly because of absent bowel sounds. The diagnosis became more difficult after the introduction of continuous gastric suction and intravenous fluid replacement, as the pain subsided and the bowel remained silent.

Miscellaneous Complications.—There were 4 patients whose wounds ruptured without any obvious reason. The wounds were resutured, and all the patients recovered uneventfully.

In 3 patients jaundice developed in the postoperative period. In 1, the jaundice occurred three months after the operation, and infective hepatitis was diagnosed on clinical and biochemical evidence. It seems likely that the patient was infected by the blood he was given during the operation, or from an injection with a contaminated needle while he was in hospital. In the other 2 patients jaundice developed during the first postoperative week; in both, a raised serum bilirubin level (4.7 and 5.3 mg. per hundred cubic centimeters) was the only biochemical abnormality. The jaundice was attributed to hemolysis of transfused blood.

Mild infection of wounds was not uncommon, but the occurrence was not always recorded in the case notes, and consequently the incidence is not known.

CONCLUSIONS

In a series that includes emergency gastrectomies a mortality rate of 2.1 per cent might be considered satisfactory, but detailed analysis of the 5 deaths shows that 3 of them (Cases 2, 3, and 5 of the duodenal and anastomotic leak group) might have been prevented with better technic at operation or improved postoperative management. It is difficult to see how death could have been prevented in the patient who had the vasovagal attack or in the patient with the stomal ulcer. It is unlikely that in any large series the mortality rate will ever be much less than 1 per cent.

This investigation has confirmed certain points that are worth restating:

1. The lung fields of each patient should be examined roentgenographically to eliminate pulmonary tuberculosis. If a lesion is present, even though it is considered inactive, partial gastrectomy, if it must be done at all, should be delayed to allow time for adequate preoperative antituberculosis treatment.

2. If there is any evidence of prostatic enlargement, the condition should be assessed and a decision made on the line of treatment to be adopted, *before* acute retention of urine develops as a complication of partial gastrectomy.

3. At operation the anastomosis and the duodenal stump must be adequately sutured, but the blood supply must not be compromised; if there is any doubt about the security of the suture line, the area should be drained.

4. During the immediate postoperative period the patient must be observed by *someone who has sufficient knowledge and* experience to recognize the early signs of such complications as hemorrhage and leaking suture lines, so that treatment can be initiated before irreversible damage has occurred.

5. Antibiotic-resistant staphylococci are unwelcome residents in surgical wards and, as the danger that postgastrectomy staphylococcic enterocolitis may develop seems to be greater when the broad spectrum antibiotics are used, their use should be restricted.

6. Intravenous fluid after operation is usually unnecessary and can be harmful; it should be given only when specially indicated.

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ZUSAMMENFASSUNG

Es liegt eine Untersuchung des unmittelbaren postoperativen Krankheitsverlaufes bei 240 aufeinander folgenden Krankheitsfällen vor, in dene wegen peptischer Geschwüre eine partielle Magenresektion ausgeführt worden war. In dieser Krankenserie kamen fünf Todesfälle vor. Die Ursachen, die Behandlung und die Vorbeugung der auftretenden Komplikationen werden erörtert. Undichtigkeiten des Duodenalstumpfes und der Anastomose sowie postoperative Blutungen gehörten zu den häufigsten ernsten Komplikationen. Die Nachprüfung der Fälle zeigt, dass manche Komplikationen auf Fehlern in der Technik oder in der postoperativen Versorgung beruhten, und dass die Sterbichkeitsquote sich auf ein Prozent herabsetzen liesse.

RÉSUMÉ

Les progrès postopératoires immédiats d'une série de 240 malades ayant subi une gastrectomie partielle pour ulcère peptique sont étudiés. La statistique comprend 5 décèe. Les causes, le traitement et la prévention des complications rencontrées sont analysés. Des suintements du moignon duodénal et de l'anastomose, ainsi que l'hémorragie postopératoire sont à l'origine des complications graves les plus fréquentes. Cette étude montre que certaines complications sont à mettre sur le compte d'erreurs de technique ou du traitement postopératoire, et que le taux de mortalité pourrait être réduit à 1%.

RESUMEN

Se han estudiado en este trabajo los progresos conseguidos, en el postoperatorio inmediato de 240 enfermos de úlcera péptica operados de gastrectomía parcial. Cinco de los operados murieron a consecuencia de la operación. Se estudian las causes, tratamiento y prevención de las complicaciones. Las complicaciones mas frecuentes fueron le dehiscencia del muñón duodenal, la de la anastomosis y la hemorragia. La observación atenta demuestra que parte de estas complicaciones se deben a errores de técnica o de los cuidados postoperatorios y por ello creen los autores que la cifra de mortalidad podrá rebajarse hasta un 1%.

SUMARIO

Os progressos posoperatorios imediatos numa serie de 240 doentes submetidos a gastrectomia parcial por ulcera peptica constutuem os motivos deste trabalho. Nesta serie houve 5 mortes. Discutem as causas e prevenção das complicações encontradas. As complicações comuns mais serias foram a deiscencia do coto duodenal, e as hemorragias na anastomose e no posoperatorio. Ficou demonstrado que algumas dessas complicações foram devidas a erros de tecnica ou de assistencia no posoperatorio e que a taxa de mortalidade poderia ter sido reduzida a 1 por cento.

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Fat has a scanty blood supply, and therefore a poor resistance to trauma and infection. It must be treated gently. cut cleanly. not torn or undermined. The fatty layers of a wound should be drained under conditions of contamination in which more vascular tissues could be trusted. Fat is on the whole the enemy of surgical handicraft. It tends to alternate with connective tissue in the interspaces of the body, such as the subcutaneous layers and the mesenteries. Where there is little fat there is much fibrous tissue and stitches hold well; where there is much fat blood vessels have hardly any adventitious sheath. and tear easily or slip out of ligatures. and stitches tend to cut out.

—*Ogilvie*

Genitourinary Surgery

Operative Treatment of Urethral Stricture

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MONTEVIDEO, URUGUAY

The author describes the nature, pathogenesis, pathologic picture and treatment of urethral stricture, listing the indications for surgical intervention and discussing the operative technic employed.

He points out that the pathologic process is not confined to the pericanalicular areas of the corpus spongiosum but may extend to the paraurethral area, silently invading the bulbus cavernosus of the aponeurotic muscle and the superficial tissue cells of the perineum.

Preoperative and postoperative urethrograms are presented to demonstrate the results obtained. The author has demonstrated the advantages of his technic on patients formerly too difficult to catheterize and patients who had undergone hypogastric cystectomy.

THE treatment of urethral stricture is governed by the etiopathogenic process and the canalicular periurethral and para-urethral anatomotopographic process. The etiopathogenic process guides one to the site of *surface extension* in the alteration of the canalicular diameter, either of the cicatricial epitheliosclerous or of the inflammatory-sclerous type; but, besides what the anatomopathologic alteration of the stricture means in itself as regards its *location* in the urethral wall, to the prognosis and to present and future treatment, the extension of the pathologic process beyond the apparently limited area of the stricture should be considered essential. This obliges one to bear in mind the roles of the periurethral and the para-urethral areas in the integral process.

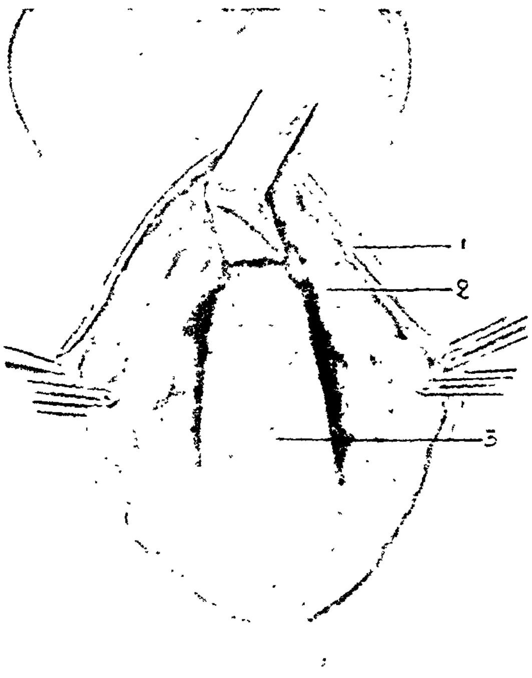

Fig. 1 (see text).

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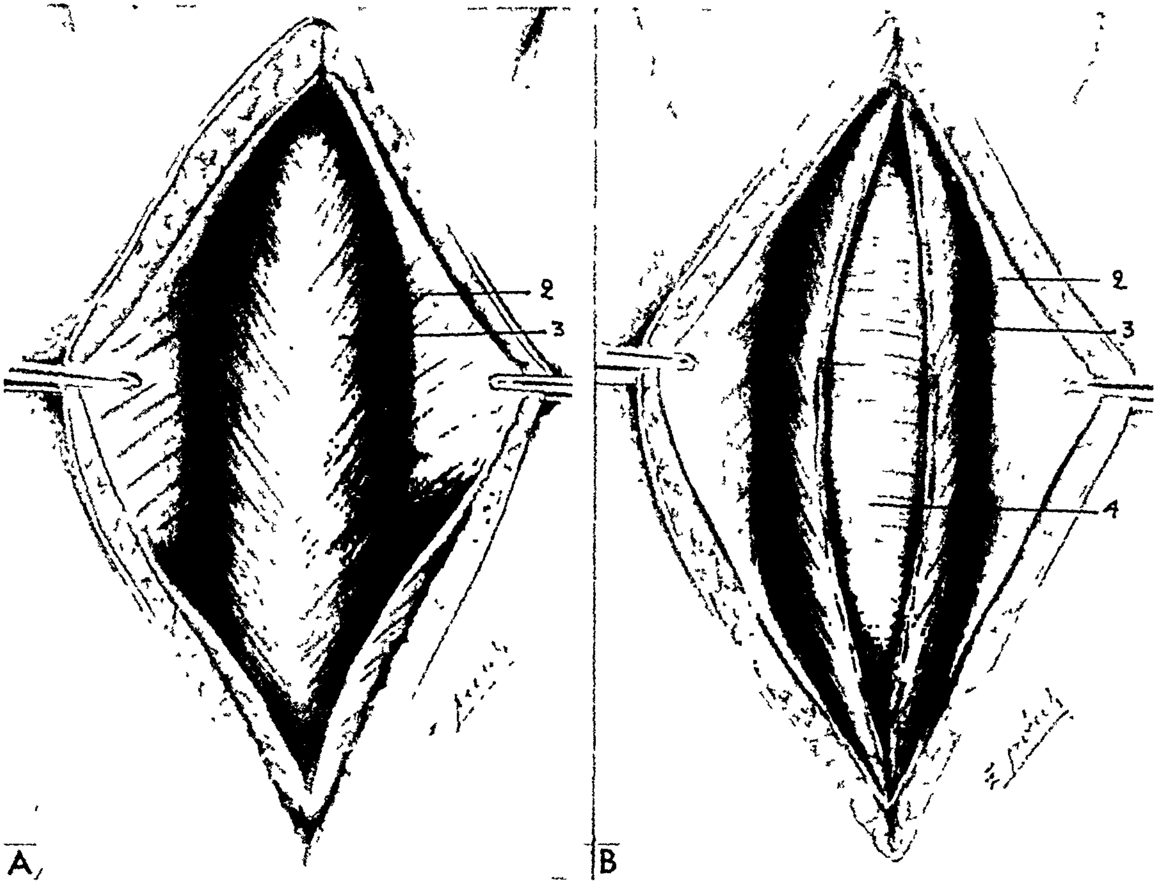

Fig. 2 (see text).

Classic authors have been absolute in describing extension of the urethral process to the area of the corpus spongiosum whereon the body of the urethral gland rests. This was the basis of the work of Finsen-Wassermann and of the Necker school brought up to date by Motz. The urethral alteration process, however, is not circumscribed in general to the pericanalicular area of the corpus spongiosum; it easily extends to the para-urethral areas, silently invading the cavernous bulb of the aponeurotic muscle and the superficial cell tissue of the perineum.

Ureterographic study of the stricture will show the participation of the spongiose and perispongiose area, invading by propagation (lymphatic or venous) sections of the perineum, and it will be understood that these conditions, whether silent or more or less noisily revived in the long run through lack of treatment or in spite of it, will form areas of sclerous reaction capable of maintaining and even intensifying the canalicular constriction. Certain topographic areas are to be considered nuclei of such an inflammatory-sclerous reaction: (a) the corpus spongiosum which —partly—is taken in any case of stricture for a peridenitic or phlebitic process showing areas of sclerosis; (b) the aponeurosis investing the corpus spongiosum, a lamina that compresses that vascular body and, responding to the initial infectious process, firmly adheres to that body aiding to prevent its expansion; (c) the bulbocavernous muscle with the superficial perineal aponeurosis investing it, by infiltration, also becomes an agent in constricting the corpus spongiosum, and (d) the area of superficial adipose connective tissue (Colles' space) which readily thickens in the presence of a urethral infectious extension process. *Thus, it will be understood* that this aggregation of inflammatory alterations, generally silent in appearance and development, should be considered an agent of sclerous constriction in the face of the apparently isolated canalicular process.

As a matter of fact, when a case of canalicular stricture is examined, it will be easy to find several situations: either the alteration is localized in the urethral ceiling as hard infiltrations, or alterations of the corpus spongiosum as hard nuclei-diaphragm-section types are present, particularly near the meatus and in the perineal-bulbar area; or again the process will extend to the whole of the cylinder in the spongiose and aponeurotic muscular areas and that of the superficial cell tissue and will have formed a sort of armor investing *the urethral canal, so that the organ can* hardly be displaced, either sidewise or backward.

The original cause is extensions by lymphatic or venous infiltration and not by *immediate progression,* silently following the urethral process. It is not difficult, therefore, to find the various apparently isolated localizations; for instance, superficial infiltration of the adipose tissue, together with stricture of the canal, with apparent indemnity of the intermediate areolar and muscular areas.

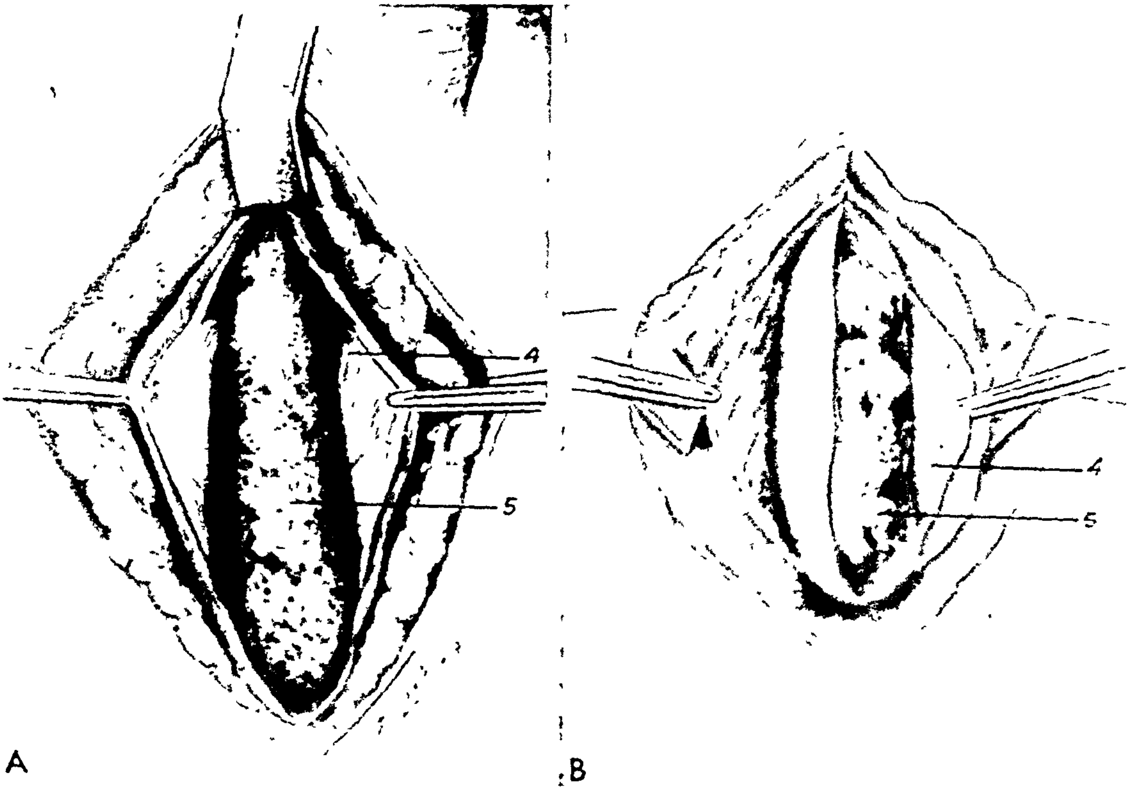

Fig. 3 (see text).

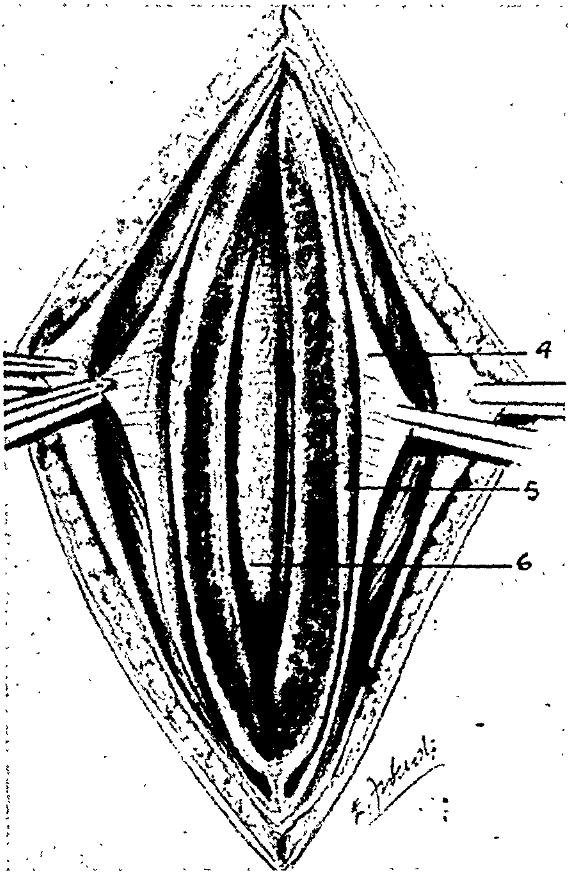

Fig. 4 (see text).

The aforementioned ureterographic exploration illustrates these distance invasions, showing, in addition to the apparently silent urethral process without any degree of dysuria, irregularities of urethral filling, with alterations of the spongiose-muscular sheath and the superficial extensions.

These surprising results of the exploration show that in the presence of canalicular stricture one should face the problem of the distance lymphatic-venous repercussion, which may be the cause of complications. The result of such chronic invasion is a slow but progressive formation, through sclerofibrous reaction, of a constriction process which, involving one after another of the periurethral and

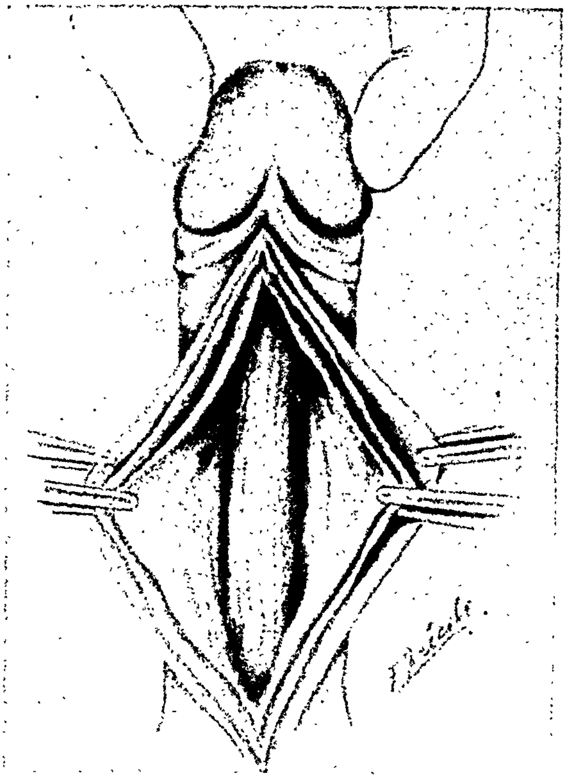

Fig. 5 (see text).

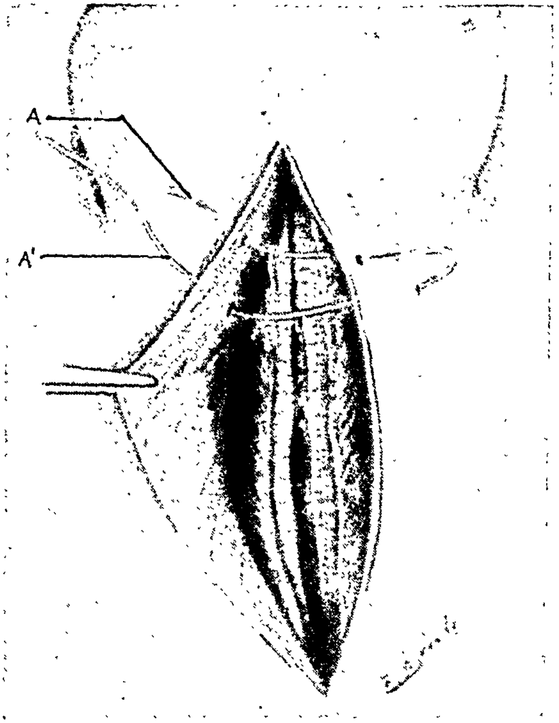

Fig. 6 (see text).

ig. 7.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

Fig. 8.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

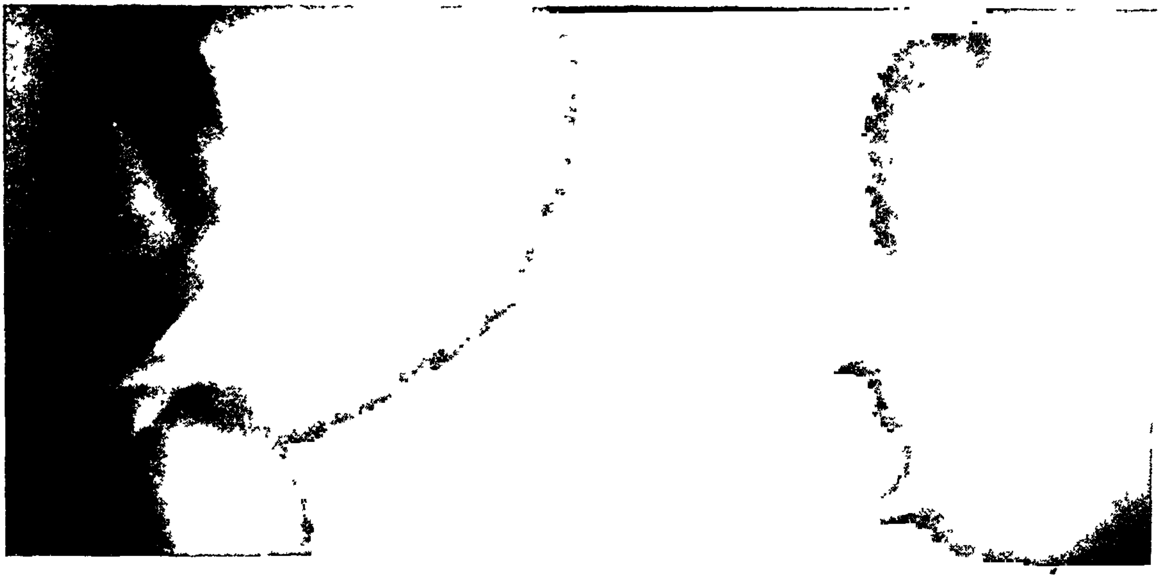

Fig. 9.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

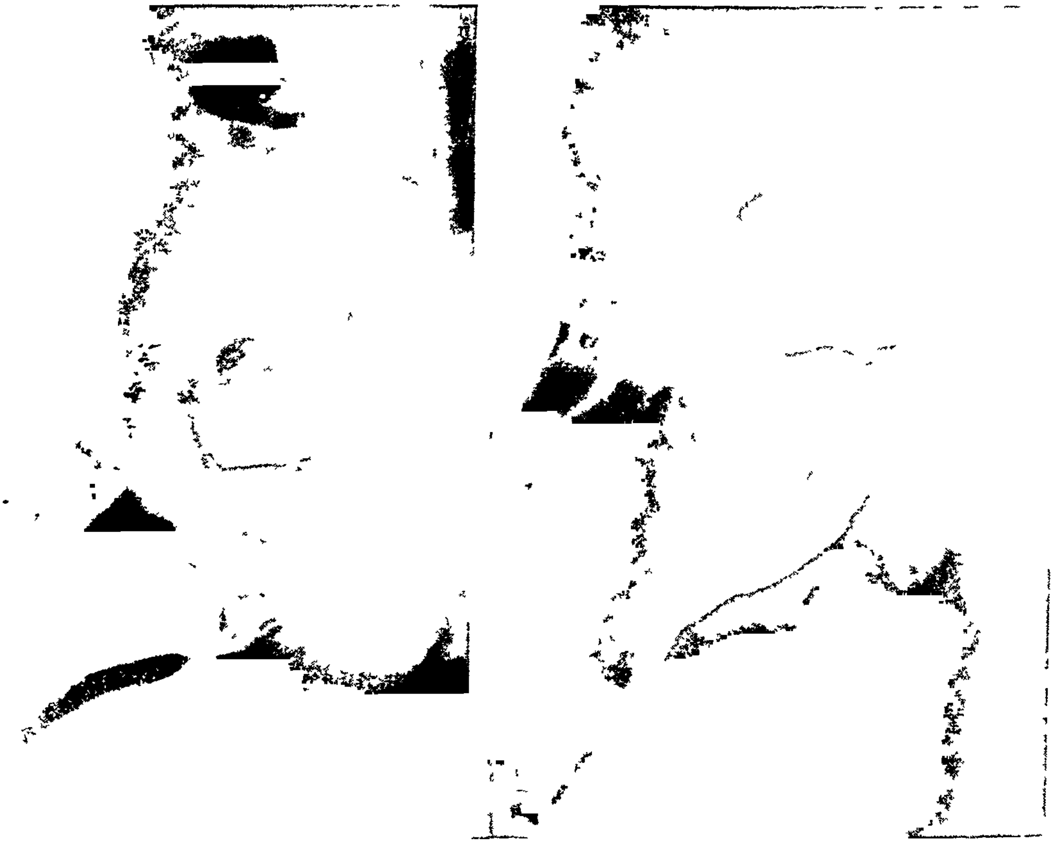

Fig. 10.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

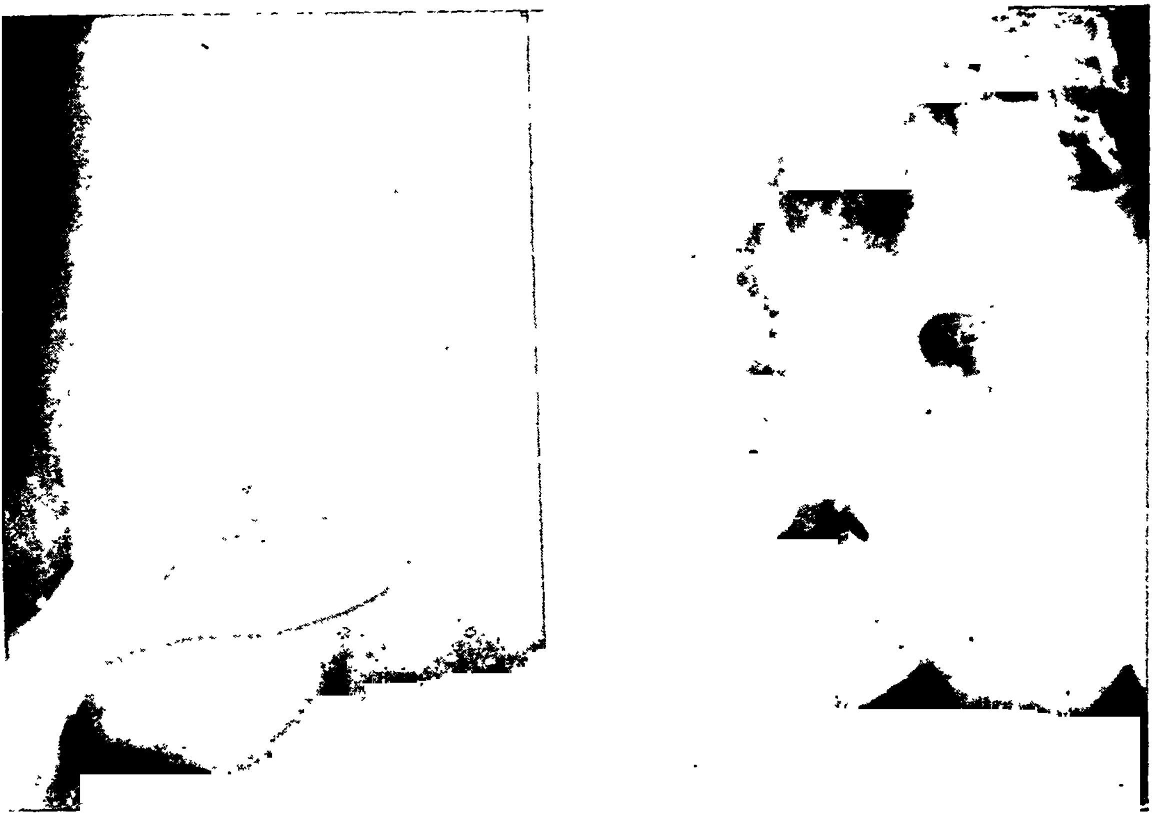

Fig. 11.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

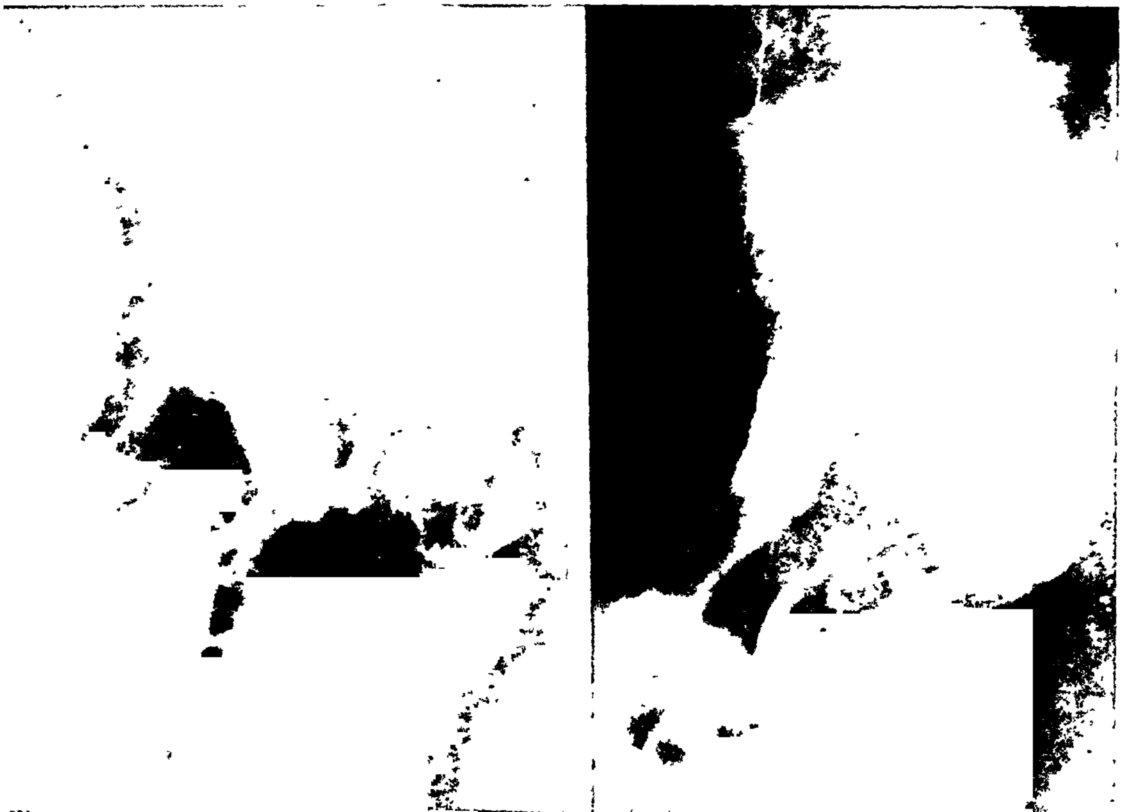

Fig. 12.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

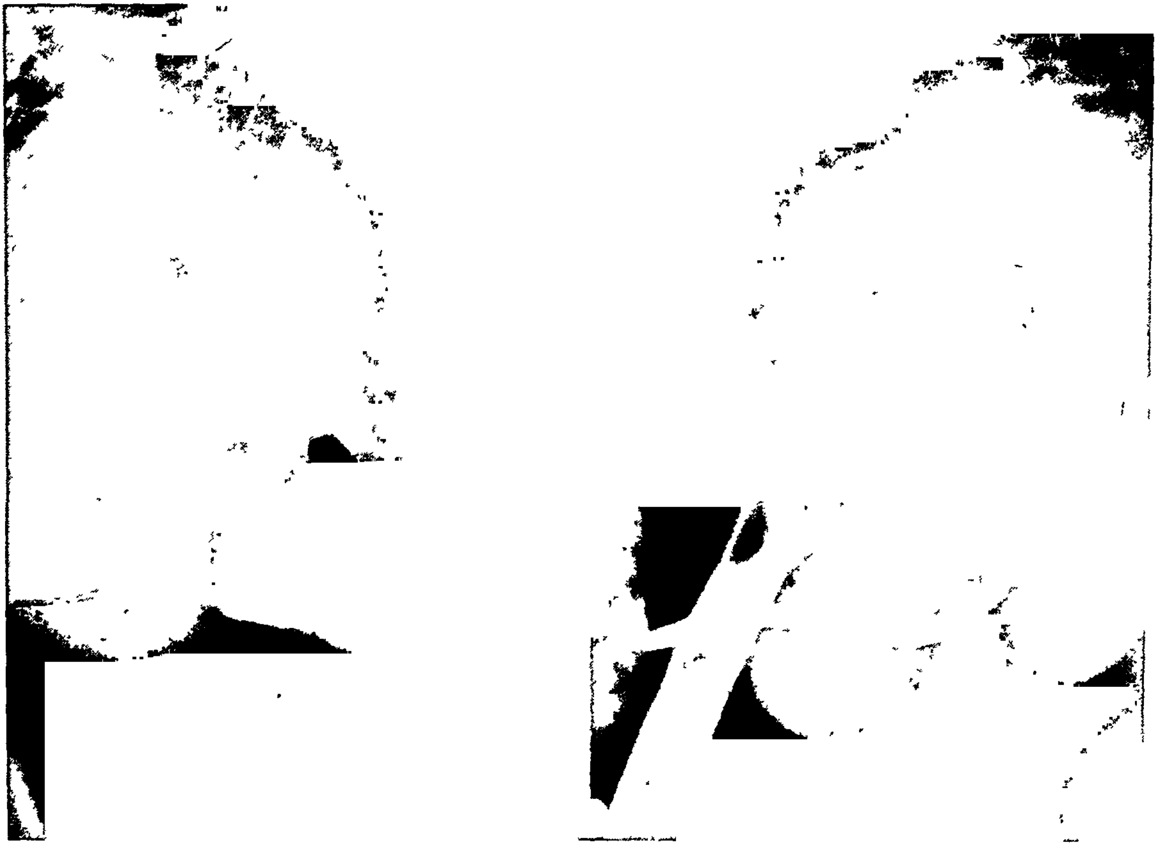

Fig. 13.—Preoperative (left) and postoperative (right) urethrograms, indicating results (see text).

para-urethral areas, maintains, increases, and renews itself, notwithstanding dilations of the stricture and the lack of canalicular extensibility.

The operation recommended will reveal the presence and participation, in varying degrees, of sclerous invasion of sections of the periurethral and para-urethral areas. In cases of unsuspected benign lesions, which would make one think of a process localized to the epitheliodermic canalicular wall, one will find thickening of the superficial conjunctive fat tissue, alteration of the muscular plane of the bulbus cavernosus and, near the area of the corpus spongiosum, great difficulty in separating, in the normal way, its investing aponeurosis. Once the latter is lifted it will be possible to see the pallor of the organ, its lack of expansion and hardening solidity of the urethral walls.

For this double reason the processes of the periurethral and para-urethral areas should be examined ureterographically in all cases of urethral constriction, and the facts observed should be borne in mind with regard to prognosis and the treatment.

Indications for Operation.—The operation should be performed when the semiologic urge is not well realized, or when, being well realized, it presents extension of the process to the periurethral area. Other conditions justifying its use are extended invasion of the corpus spongiosum, invasion of the area of the aponeurotic muscle and infiltration of subcutaneous cellular-adipose tissue.

For this reason either a single or a multiple stricture, being hard and intense, will respond to this procedure, as will the strongly sclerotic type, hard to expand, which retracts over itself; the irritable, bleeding stricture that causes fever; the stricture associated with fistula, and the urethral scissure due to trauma.

The Operation.—This therapy consists in principle of perineal intervention, of course with care not to open the scrotal loggiae.

First Stage (Fig. 1): The extra-aponeurotic cell adipose tissue (Colles' space) which infiltrated shall appear in concretions compressing the superficial perineal aponeurosis.

Second Stage (Fig. 2, *A* and *B*): Incision of the superficial perineal aponeurosis together with the bulbocavernous muscle, which will "free" the space that surrounds the corpus spongiosum (attrition area to be borne in mind, especially in the presence of acute perineal processes).

Third Stage (Fig. 3, *A* and *B*): Incision and careful detachment of the lamina investing the corpus spongiosum (aponeurosis), which will leave that body free to expand, allowing one to see its volume and color alterations in case of mere constriction. This will not happen in the frequent cases of sclerous alterations, which maintain the corpus spongiosum in its reduced volume, without expansion and without assumption of the normal dark bluish color. During this stage, one should be careful not to cut the bulbar spongiose body, in order not to expose the urethra.

Fourth Stage (Fig. 4): In the exceptional case it is sometimes necessary, as a complementary procedure, to incise the corpus spongiosum, leaving the urethra free in a wide space, without opening it, if there is suppuration or strong fibrous infiltration of the corpus spongiosum or if it is necessary to catheterize through the perineal meatus; unexpected operative opening of the urethra would not have, on the other hand, great importance.

Fifth Stage: At this point an attempt is made to catheterize the urethra through its natural channel, and, surprisingly enough, it is possible to pass large catheters where only filiform ones passed which enables one to use, rapidly and successively, probes of larger and larger size and to leave permanently the largest one used in the operation. One may use successively single and conducted filiform sounds, from the bequill to the olive-tipped and *beniqvé*, starting with the smaller calibers. The operating surgeon stands to the left or to the right of the patient in directing their progress, thus avoiding perforation of the canal, which otherwise would not cause serious consequences. *In no case should one employ round or straight Olivares stretchers, which would not pass through the narrow channel and so would damage the canal.*

Sixth Stage (Fig. 5): When the penile prescrotal portion of the urethra is profoundly altered, it will be possible to employ, in the altered area, the same handling of separation of the planes, care being taken on reaching the corpus spongiosum body, which is more vulnerable than in the restroscrotal sector.

Seventh Stage (Fig. 6): The perineum thus opened is closed by union and full joining of the superficial planes. No special suture is placed in the periparaurethral block incised. A light drain of iodoform gauze, introduced through the rear end of the incision, is left for forty-eight hours. This stage ends with a compressive dressing.

Postoperative Period.—The urethral catheter should be kept in place for a week, and after a fortnight it will be possible to complete the dilation that allows one to obtain the largest possible diameters in a few sessions.

With a short postoperative period it is possible to maintain long-lasting urethral dilations not obtained by other treatments, besides the anatomopathologic modifications obtained through the opening of the constrictions and of chronic and silent areas of infection.

A counterproof will sustain my technic. I have performed my intervention of releasing the para-urethral and periurethral planes without leaving urethral drainage in patients who were too difficult to catheterize and on whom hypogastric cystostomy had been performed, and was able to prove a few days later that it was possible to catheterize and widen the urethra with urethral catheters of higher caliber.

ZUSAMMENFASSUNG

Der Verfasser beschreibt die Natur, die Pathogenese, das pathologische Bild und die Behandlung der Harnröhrenstriktur, zählt die Indikationen zum chirurgischen Eingriff auf und erörtert die von ihm angewandte Operationstechnik.

Er weist darauf hin, dass der Krankheitsprozess nicht auf die perikanalikulären Gebiete des Schwellkörpers beschränkt zu sein braucht, sondern sich durch latentes Eindringen in den Bulbus cavernosus des aponeurotischen Muskels und in das oberflächliche Gewebe des Dammes auf paraurethrale Gebiete ausdehnen kann.

Zur Darstellung der erzielten Behandlungserfolge werden präoperative und postoperative Urethrogramme gezeigt. Der Verfasser hat die Vorzüge seiner Technik an Patienten nachgewiesen, bei denen vorher eine Katheterisierung zu schwierig war und bei anderen, an denen eine hypogastrische Cystostomie ausgeführt worden war.

RÉSUMÉ

L'auteur décrit la nature, la pathogénie, le tableau pathologique el le traitement du rétrécissement uréthral, énumérant les indications chirurgicales et discutant la technique opératoire.

Il montre que le processus pathologique ne se limite pas aux régions précanaliculaires du corps spongieux mais peut s'étendre á la région para-uréthrale avec envahissement muet du tissu musculaire et des tissus superficiels du périnée.

Des uréthrogrammes pré- et postopératoires éclairent les résultats obtenus. L'auteur a démontré les avantages de sa technique dans des cas où un cathétérisme s'avérait trop difficile ainsi que dans des cas avant subi une cystostomie hypogastrique.

SUMARIO

Descreve a patologia e o tratamento da estenose uretral, fazendo as indicações cirurgicas e discutindo as tecnicas operatorias.

Acentua que o processo patologico nao se limita as areas pericanaliculares dos corpos esponjosos mas pode se extender a area para-uretral invadindo, principalmente, o bulbo cavernoso do musculo-aponeurotico e as do tecido superficial do perineo. As uretrografias no pre e no posoperatorios säo apresentadas. O A. demonstra as vantagens de dua technica nos casos em que inicialmente era dificil cateterizar e que foram submetidos a cistostomia hipogastrica.

Congenital and Acquired Obstructions of the Urinary Tract

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A brief review of the commoner causes of urethral obstruction is presented, emphasizing congenital phimosis, stenosis of the external urinary meatus, valve of the posterior urethra, and contracture of the vesical neck.

Acquired inflammatory and traumatic strictures are considered, as well as foreign bodies, calculi and tumors. Basically, treatment is aimed at promoting an adequate flow of urine by removal of the lesion or urethral dilation. The history, embryonic background and anatomic aspects of the urethra are considered.

Most prominent causative factors were instrumentation and postgonorrheal urethritis.

The need of early recognition of these obstructive lesions is emphasized. Prompt, adequate treatment must be given to prevent irreversible damage to the upper part of the urinary tract.

OBSTRUCTION to the free flow of urine anywhere between the glomerulus and the external urinary meatus is an urgent problem requiring immediate relief. An understanding of the basic uropathologic and the regional anatomic background is mandatory.

Review of the records at Sequoia Hospital, Redwood City, California; Community Hospital, San Mateo, California and of the private practice of one of us shows that 98 cases of obstruction of the lower part of the urinary tract were observed and treated during the past two years (exclusive of prostatism). So large a number of cases emphasizes the importance of this problem.

To discuss congenital and acquired obstruction of the urinary tract both from our own viewpoint and from that of others proved such an ambitious undertaking that our remarks herein will be limited to the commoner obstructions of the lower part of the tract in the male (see table). In subsequent articles other obstructive uropathic conditions will be considered.

History.—Historically, Folsom noted a reference by the Hindus to the treatment of urethral pathologic changes as early as 500 B.C. About 400 B.C., Hippocrates described urethral abscesses. Celcus, at the beginning of the Christian era, discussed impacted urethral stones. Shortly afterward, Galen described perineal urethrotomy.

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During the sixteenth century bougies of wax, gum elastic, whalebone and flexible ivory were used, and in 1855 McDowell employed slippery elm bark for urethral dilation. The technic of internal and external urethral compression was practiced by the French in the early nineteeth century. Although cauterization of strictures was first described five centuries ago, this technic persisted into the nineteeth century.

Internal urethrotomy was reported by De Vega and Diaz four hundred years ago but did not come into wide use until 1825, when it was employed by Stafford. The widely used Maisonneuve urethrotome was developed in 1854. External urethrotomy was reported by Wiseman in the seventeenth century and used extensively by Jameson (1844) and Syme (1884). In 1878 Otis studied pathologic conditions of the male urethra and theorized that "the normal urethral calibre" was "definitely larger than had been previously thought." Otis demonstrated a relation between the penile circumference and the anterior urethral calibre, and his urethrometer successfully calibrated the anterior urethra. The existence of strictures of large calibre and the cause of persistent "gleet" was also discussed.

Although the history of gonorrhea goes back to the fifteenth century B.C., as recorded in the Old Testament, the disease was not so named until Galen's day. In the nineteenth century Finger noted submucosal penetration of the organisms and deep tissue reactions. In the twentieth century Pelouze described the immunity of squamous epithelium and the susceptibility of columnar epithelium to this disease.

Roentgenographic study of the lower part of the urinary tract was first done by Von Zeissel on a cadaver in 1902. Air contrast studies were performed by Keller in 1904. Stricture visualization, with the use of radiopaque Argyrol, was described by Cunningham in 1910. In 1922 Beclere and Hertz described the oblique position now employed. Although iodized oil media were described by Sicard and Forescier in 1924, it remained for Flocks, in 1933, to suggest the use of radiopaque media in jelly suspension for good visualization. We use this type of medium for our studies. Recently, the use of Thixokon® for urethrographic procedures has been favorably reported upon by Kaufman and Denman. They noted the lack of bubbles in the solution, which is easily injected and is considered safe even if absorbed intravascularly.

Embryonic Development.—For a thorough understanding of obstructive urethral disease a brief consideration of the pertinent embryologic aspects of the region is advisable. Division of the common cloaca into the dorsal rectal area and the ventral urogenital sinus is completed by the seventh intrauterine week, when the urorectal septum fuses with the cloacal membrane. The urogenital sinus subdivides into two portions: the dorsal section, into which the mesonephric ducts enter to form the bladder and the posterior portion of the urethra, and the ventral section, which forms the remainder of the urethra.

The genital tubercle forms on the surface of the ventral body and becomes elongated. The cloacal membrane invaginates to form a vertical urethral groove, into which the urogenital sinus opens caudally. On the undersurface of the elongated genital tubercle paired lateral urethral folds appear, while more laterally labioscrotal swellings arise. The perineum forms as the urethral groove is separated from the anal pit. By the twelfth week the urethra is formed as the urethral folds fuse from the base of the penis forward, closing off the urogenital

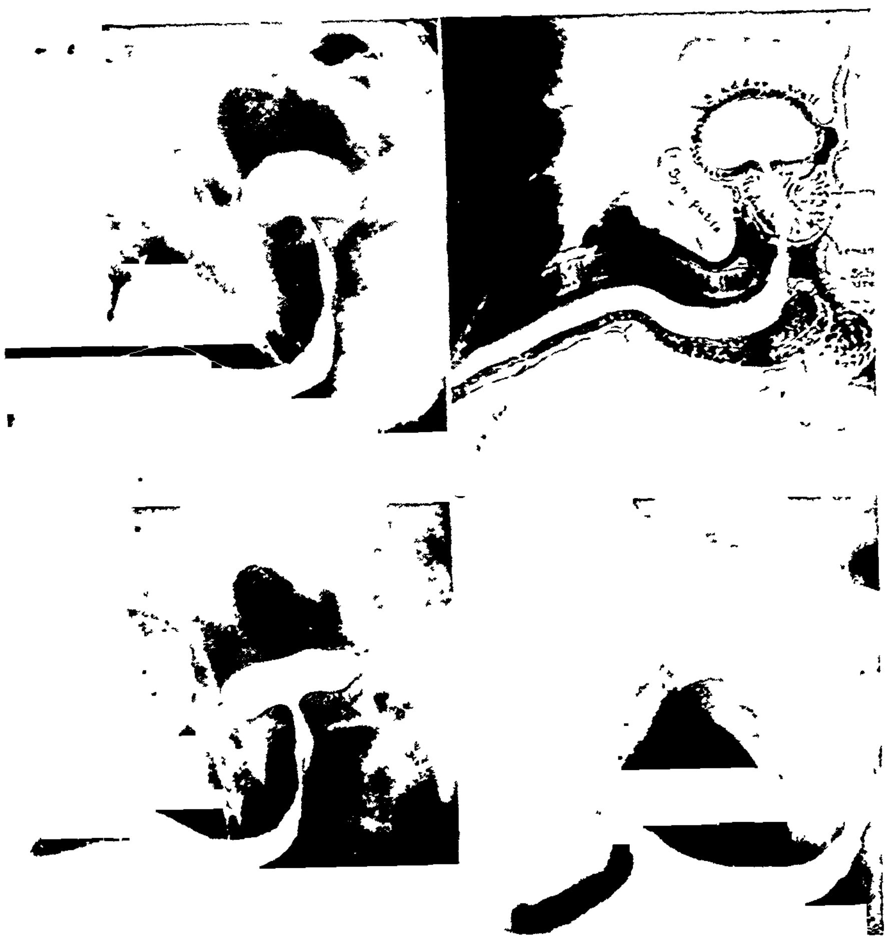

Fig. 1—Normal urethrograms Film at lower right illustrates angulation at penoscrotal juncture from inadequate penile traction. *(From Beard, D. B., Goodyear, W. B., and Weems, H. S.:* Radiologic Diagnosis: Lower Urinary Tract, 1952. *Reproduced by courtesy of Charles C Thomas, Publisher.)*

sinus. These fused edges form the penoscrotal raphe. At the ventral base of the glans penis the urethral plate splits and closes last, forming the fossa navicularis and the external urinary meatus. The prepuce develops from the growth of ventral epithelium arising at the glans area of the genital tubercle. Internally, the verumontanum develops from remnants of the müllerian duct at the fourteenth week of fetal life.

Anatomic Features.—The normal male urethra averages 20 cm. in length and runs an S-shaped course. An elastic tube, the urethra provides for the passage of urine, ejaculatory fluid and glandular secretions. The prostatic portion of the urethra, lined with transitional cell epithelium, is 2.5 cm. long and extends from the neck of the bladder to the triangular ligament. This is the widest and most dilatable portion of the urethra and has an average calibre of 45 F. On the floor of the urethra the prostatic acini terminate and the verumontanum eminence, with its ejaculatory ducts, appears.

Stratified columnar epithelium lines the short (1 cm.), narrow membranous portion of the urethra, which lies firmly fixed within the triangular ligament behind the symphysis pubis. The lumen here is only moderately dilatable and averages 27 F.

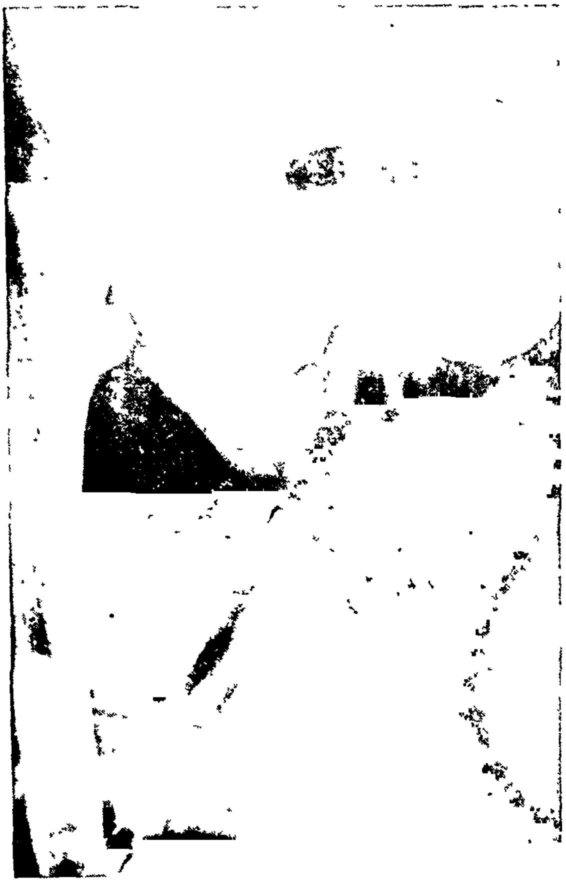

Fig. 2.—Contrast air study of special value in location of nonopaque urethral calculi.

Cowper's bulbouretheral glands lie posterolaterally in the urogenital diaphragm. Together the prostatic and membranous areas form the posterior portion of the urethra.

The long anterior portion of the urethra is lined by pseudostratified epithelium as far as the fossa navicularis, where squamous cells appear. In its obliquely forward 17 cm. course from the outer layer of the triangular ligament, the anterior portion is surrounded by the corpus spongiosum, except about the proximal bulbous area, Here fixed in position, the urethra is uncovered and easily traumatized. The bulb is wide and calibrates 33 to 36 F. The bulbourethral glands open on the floor of the bulbous portion of the urethra. Along the roof of the anterior portion lie the numerous mucus-secreting glands of Littré. The pendulous portion of the urethra ranges from 27 to 33 F. The fossa navicularis is one of three wide areas (bulb and prostatic region) of the urethra.

The external urethral meatus is a narrow vertical slit (21 to 27 F). An instrument that can pass through this least dilatable portion of the urinary canal should pass easily through the normal urethra.

The urethra is so constructed that its diseases encroach upon and distort the lumen. The location and extent of these lesions are demonstrable on studies with *contrast media. The normal urethrogram* is a tubular opacity, widest in the bulbous area and narrowing proximally about the sphincters (Fig. 1). The external meatus and the fossa navicularis are distorted by retrograde injection of dye and are best seen on voiding urethrograms. A posterior spindle-shaped filling defect represents the verumontanum. Penoscrotal angulation may be present, unless traction is exerted on the penis at the time the roentgenogram is taken. An oblique film gives the best visualization of the entire urethra. The urethrographic process is simple, rapid and painless and provides a permanent record.

Our technic is first to empty the bladder. Retrojection of radiopaque jelly has usually been done by holding a 2-ounce Asepto syringe, fitted with a rubber acorn tip, against the meatus. Roentgenographic exposure is made during injection. In the past we have supported the penis with a bare or lead-gloved hand; recently, however, our respective radiology departments have become concerned about the amount of exposure we have been getting, so that we are now using the Brodny clamp and are stepping out of the immediate roentgenographic field. Retrojection of air has been valuable in outlining pathologic conditions within the urethra, especially nonopaque calculi (Fig. 2). The lack of

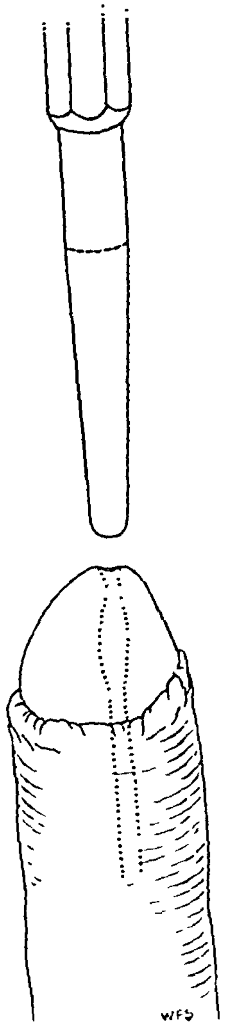

Fig. 3.—Plastic meatal dilator 8 cm. long, 6 F to 28 F caliber. *Above*, meatal dilator in place; *below*, sharp meatal dilator perforating urethra.

urethral irritation that results from this method favors its more widespread use.

Congenital Urethral Obstructions.—By custom, first consideration is given to the congenital causes of urethral obstruction. Urethral anomalies are caused by maldevelopment of the genital tubercle and the urogenital sinus. Arrest may take place at any stage of embryonic development.

1. *Absence of the Urethra* is rare. It may be associated with absence of the penis but is more commonly observed in male infants in whom the penis is normally developed. This condition may be incompatible with life. Death *in utero* results from pressure of the distended bladder on fetal circulation. The child may survive with an outlet through the rectum or the urachus. Early urethrotomy is mandatory and delayed secondary urethroplasty advisable.

2. *Imperforation of the External Urinary Meatus* is not uncommon. It is remedied by immediately opening the outlet in the glans penis. If there is more extensive obliteration of the urethra, the

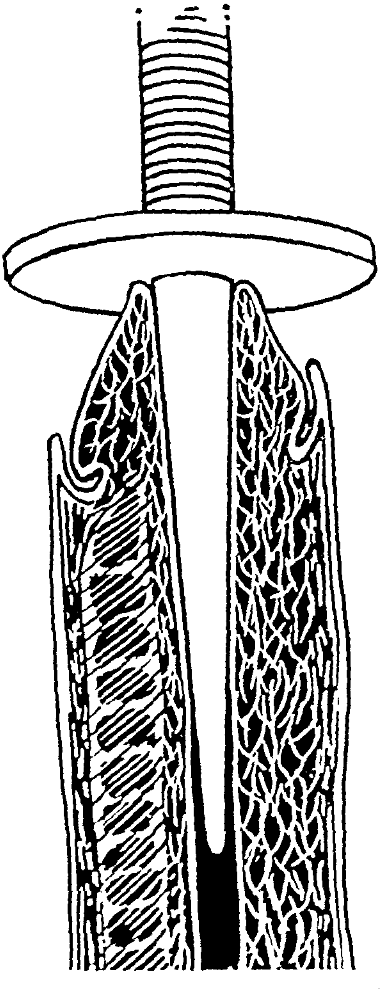

Fig. 4.—Suggested treatment of meatal stenosis with modified urethral dilator. Tapered dilator is 4 cm. long, caliber 6 F at tip and 14 F at base.

chances that the child will live are poor.

3. *Congenital Cysts of the External Urinary Meatus* may cause obstruction.

4. *Congenital Phimosis,* or narrowing of the preputial orifice, is the result of maldevelopment. The prepuce cannot be retracted and is often made adherent to the glans by retained secretion. The hypertrophic type covers the glans, and the orifice is small. In the atrophic form the prepuce is short and the opening small. The orifice is often so narrowed that urination is obstructed. Treatment is by circumcision.

5. *Congenital Stenosis of the External Urinary Meatus* is very common; yet it is frequently unrecognized until symptoms occur (usually consisting of ulceration at the meatus and a drop of blood on the diaper). In Campbell's opinion this condition, with its grave portent, is often inadequately diagnosed. He stated that one-fifth of all pediatric urologic disorders have meatal stenosis as their basis. In cases of hypospadias, the defect in fusion of the urethral folds is usually associated with external meatal stricture (50 per cent). Smith has noted that, while the meatal orifice is in the midline, the penoscrotal raphe may deviate to one side or the other. Rau stated that 2.5 per cent of all urethral strictures occur at the external urethral meatus and that narrowing is limited to the distal 3 mm. of the urethra. Early circumcision has been advised by Lowsley and Kirwin, in whose opinion meatal stenosis accompanies a long prepuce. On the other hand, Berry and Cross calibrated the meati of 200 circumcised and uncircumcised infants under 18 months of age: only 30 per cent of the patients in the circumcised group had a meatal opening of 14 F or larger, yet 53 per cent of the patients in the uncircumcised group did. Ten per cent of the patients in the circumcised group had

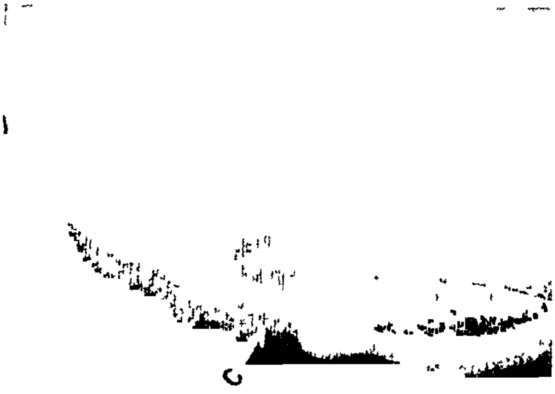

Fig. 6 —Congenital hypertrophy of verumontanum in boy 5 years old. *(From Kjellberg, S. R., Ericsson, N. O., and Rudhe, U.:* The Lower Urinary Tract in Childhood; *reproduced by courtesy of Almquist and Wiksel, Stockholm.)*

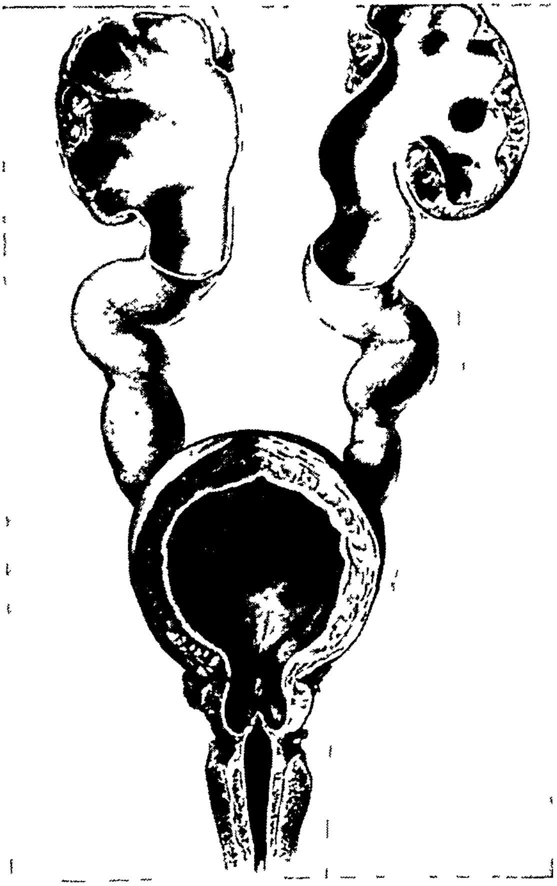

Fig. 5.—Congenital inframontal urethral valve with proximal dilatation of urinary tract. *(Reproduced by courtesy of Ciba Pharmaceutical Products, Inc.)*

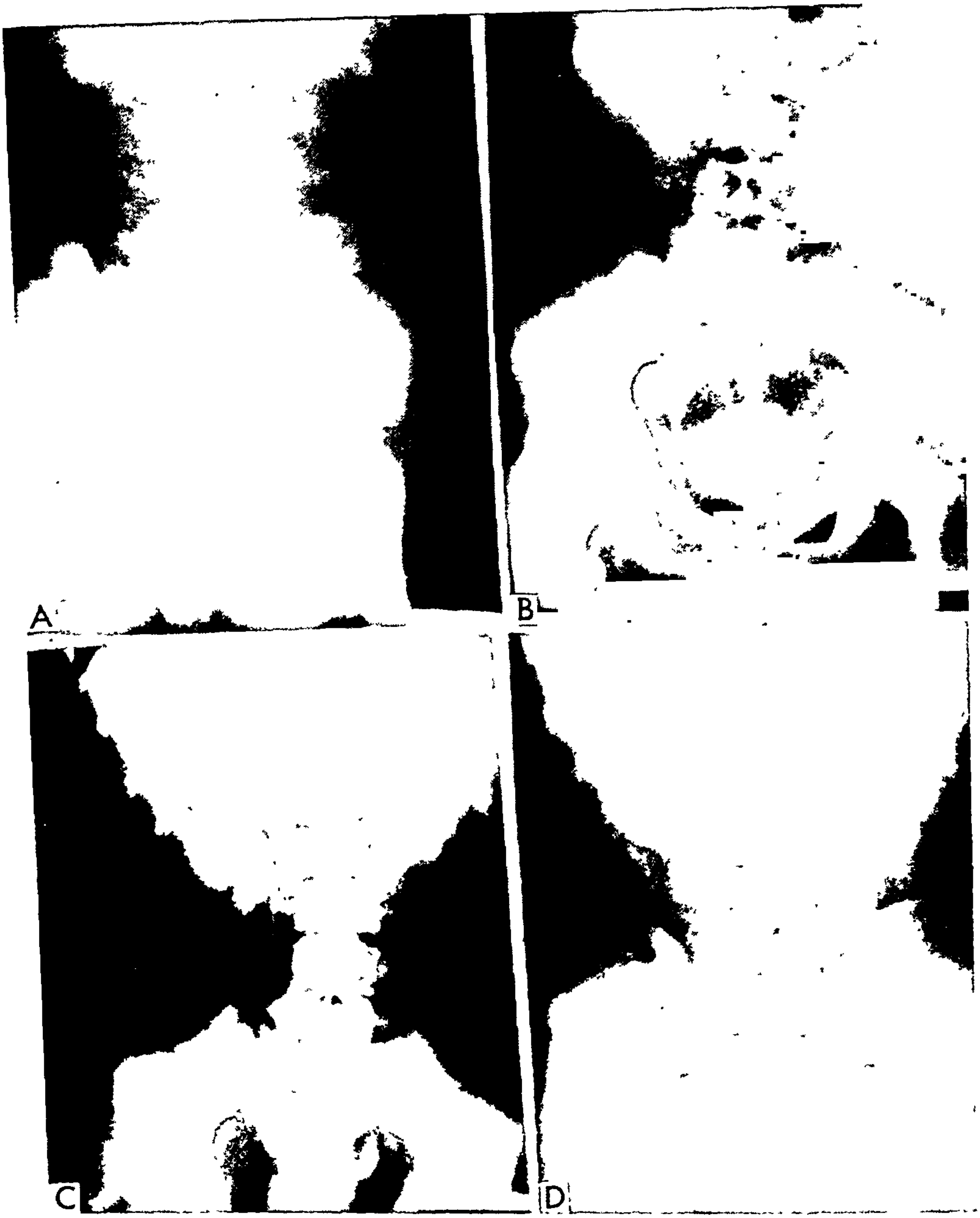

Fig. 7.—Contracture of vesical neck in boy aged 14. *A*, distended bladder; *B*, bilateral dilatation of upper part of urinary tract, with complete reduplication of right upper tract. *C*, same patient two years later (excretory urogram after second resection). *D*, same patient nine years later; progressive improvement in upper part of tract.

stenoses tighter than 10 F, as compared with only 3 per cent of the uncircumcised infants. Berry and Cross postulated that early circumcision is related to ulcerative meatus and secondary stenosis; they suggested a delayed procedure. The basis of the ulceration is probably mechanical and chemical (wet diaper) irritation. We have speculated about the use of a thin, emollient, acidic ointment over the meatus of

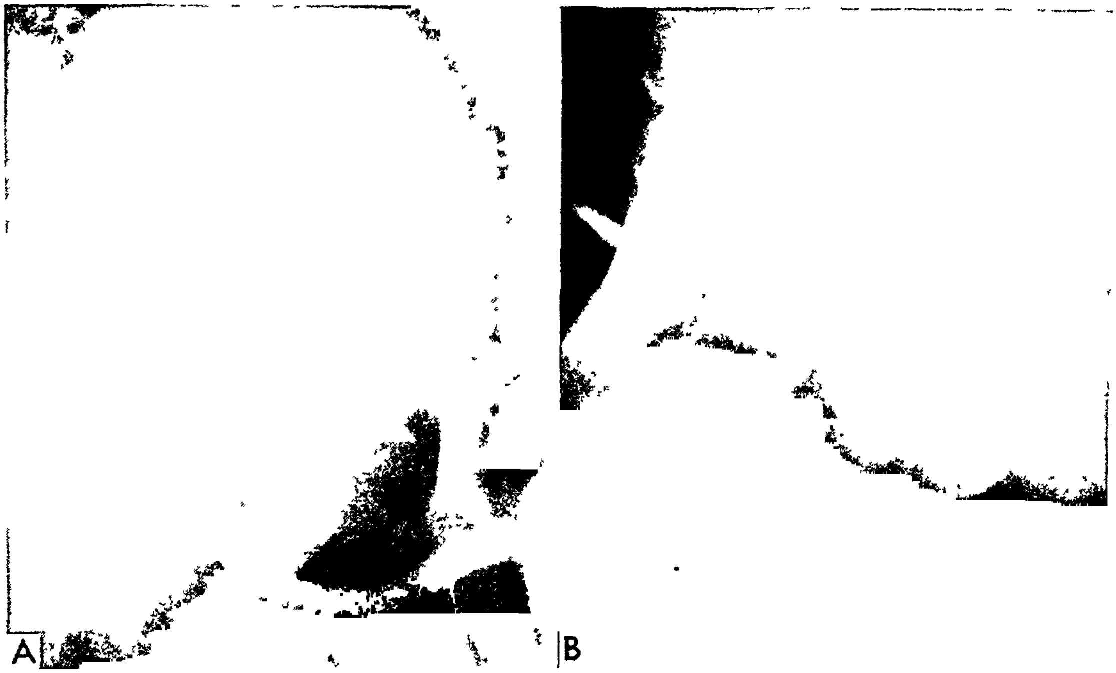

Fig. 8.—*A*, urethrogram depicting bulbomembranous stricture with posterior urethral fistula ("watering can" perineum). *B*, urethrogram demonstrating membranous stricture, spindle-shaped verumontanum and elongated posterior portion of urethra.

the circumcised infant to prevent such irritation.

Manifestations of obstruction may include straining at urination, distention of the bladder, overflow urinary incontinence, enuresis and ulceration about the meatal lips. Compressing the meatus horizontally will show the true size of the vertical meatal slit. Barnes calibrated the normal infant meatus at the age of 1 year, at 10 F; at 5 years, at 15 F; at 10 years, at 18 F, and in the adult, at 26 F. The diagnosis is confirmed by observation of the size and direction of the stream of urine. In a patient with a pinpoint meatus, urethrographic investigation and studies of the upper part of the tract are advisable to rule out the presence of the effects of back pressure.

Early correction of this condition may well forestall the onset of acute pyelitis. Adequate meatotomy with subsequent dilation is necessary. We slit the bottom commissure with a bistoury knife or a No. 11 scalpel blade gently inserted 1 cm. into the meatus in the trough of a grooved director. No anesthesia is used for infants and young boys. For adults, topical 4 per cent procaine hydrochloride is sufficient. Bleeding is controlled by digital pressure. Immediate dilation with a well-lubricated meatal dilator is done. We instruct the parents or the older patients to hold the glans penis on the stretch between the thumb and forefinger of one hand to straighten the urethra. The meatal dilator is held in the other hand and directed straight down along the course of the urethra to a depth that gives appropriate caliber to the meatus.

One commonly used dilator (Fig. 3), made of rigid lucite, measures 8 cm. in length and ranges from 6 F to 28 F in diameter. In our opinion this instrument is too sharply pointed for safety. Since there are no markings to guide the user, overzealousness may result in undue depth of insertion and perforation of the urethral wall. Catheter plugs have also been used for meatal dilation. Since they range from 17 F to 28 F in calibre, there is usually disproportion in introducing them through the external meatus. The use of oral thermometers has been advocated for meatal dilation. These range from 9 F to 13 F in calibre. After one of us spent a busy evening picking pieces of a broken thermometer from a baby's urethra and calming his frantic parents, this method was hastily abondoned. Some of our colleagues have used a well-lubricated cotton-tipped applicator stick for meatal dilation. For home use we do not consider this tapered well enough to facilitate easy introduction. In addition, there is the possible danger of losing the tip of cotton in the urethra. We have recently designed a series of smooth, tapered plastic meatal dilators with rounded tips and limiting collars at their bases (Fig. 4).* These dilators are easily cleansed and do not require sterilization. The smallest dilator ranges from 6 F to 14 F in a 4 cm. length and suffices for preliminary treatment. The medium-sized dilator measures 12 F to 18 F and the largest 16 F to 24 F. Each of the dilators measures 5 cm. in length. These dilators are marked so that the proper size can be identified easily by the physician. Thus we hope to prevent the drawbacks previously outlined. The projecting collar

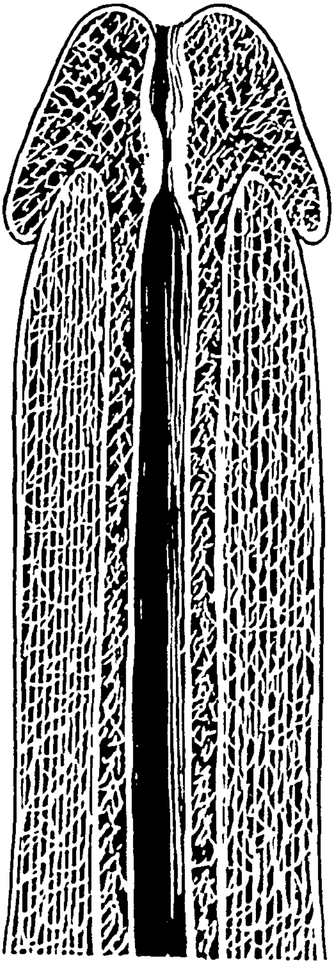

Fig. 9.—Site of postresection trauma (stricture) at fossa navicularis, with proximal widering of urethra.

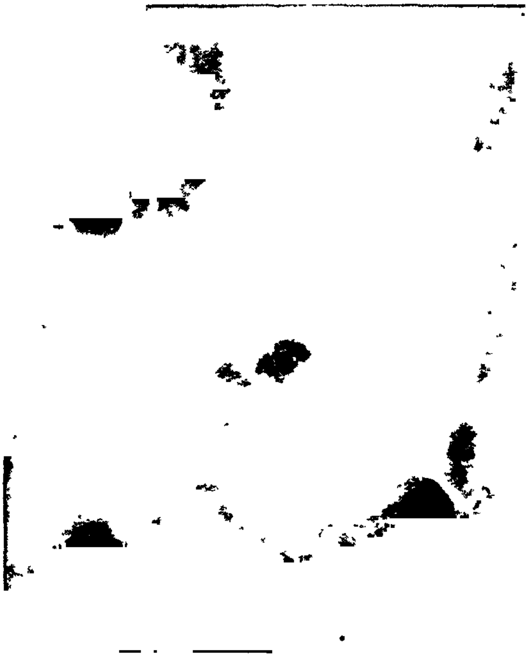

Fig. 10.—Urethrogram depicting obstruction due to carcinoma of urethra.

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*Designed with the help of Mr. [illegible] Custom [illegible] Makers Inc.

limits the depth of penetration and makes this instrument relatively foolproof, yet it permits adequate meatal dilation. The best results are obtained from twice weekly, progressive use of these well-lubricated dilators for at least six weeks.

6. *Congenital Stenosis of the Urethral Canal* is not an uncommon condition in the anterior portion of the urethra. The narrowing usually occurs at the bulbomembranous juncture or at the proximal margin of the fossa navicularis. True scar tissue due to local inflammatory change is usually absent. The diagnosis is confirmed by urethroscopic and urethrographic study and the use of sounds. Treatment consists of intermittent dilation until the area has reached a suitable calibre that becomes permanent.

7. *Congenital Valve of the Posterior Portion of the Urethra* is frequently listed as a cause of urinary disturbance in male children, resulting in back pressure with progressive dilation of the bladder and the upper part of the tract. The condition was first described by Langenbeck in 1902. Young (1913) classified the most common form as inframontal (Fig. 5), extending from the verumontanum anteriorly to the circumference of the urethra in the bulbomembranous region. The less common supramontal form extends upward toward the internal sphincter. The iris form is unrelated to the verumontanum and may be observed above or below this structure. The passage of an instrument from below is unimpeded, since the valves collapse inward. Outflow of urine is inhibited, since the valves balloon against the roof on voiding. Etiologic theories include persistence of the urogenital membrane, wolffian-müllerian duct remnants and fusion of the urethral roof with the verumontanum at a time of embryonic epithelial overactivity. The symptoms are obstruction and secondary infection, and resemble those of prostatic obstruction. The valves are usually diagnosed in young persons but may not be seen for many years. Pulling at the prepuce and glans penis in infants may be a significant sign, as may redness of the face from straining at urination. Overflow incontinence and bedwetting are often present. A distended bladder may be observed. In differential diagnosis, chronic nephritis must be considered. Urinalysis usually reveals pus, and there may be diminution of renal function. Excretory urographic study often demonstrates proximal distention of the urinary tract. Urethroscopic study is essential, since the valves are best seen as the instrument is withdrawn. Controversy exists as to whether treatment should consist of transurethral resection or open excision.

8. *Congenital Hypertrophy of the Verumontanum* has been observed urethroscopically (Fig. 6). The verumontanum is greatly enlarged and elongated, may obstruct the posterior urethra and is frequently associated with posterior urethral valves. Campbell noted Brody and Goldman's etiologic hypothesis of stimulation by circulating estrogens during fetal life. Although partial endoscopic excision has been advocated when the hypertrophy is obstructive, the danger that infertility may result from this procedure must be considered.

9. *Congenital Obstruction of the Vesical Neck* is more common than was once believed, according to Burns and Shashy. In a study of 129 cases of obstructive lesions of the lower part of the urinary tract in children, these authors noted such contractures in 123. The condition must be differentiated from urethral valves, hypertrophy of the verumontanum and neurologic maldevelopment. Neuromuscular imbalance between the nerve fibers supplying the detrusor muscle and the external urinary sphincter may cause this

condition. Careful examination to rule out defects of the spinal cord is emphasized. Barnes and Hadley questioned whether stenosis of the vesical outlet may be due to fibrosis, muscular hypertrophy or sphincteric spasm. A great many patients with enuresis are said to have obstructive lesions of the lower part of the tract. In discussing congenital contracture of the vesical neck in children, Deakin expressed the opinion that with regard to this condition the male predominates in at least a 2 to 1 ratio, whereas Burns stated that the incidence is equal for the sexes.

The dangers are those of embarrassment of the upper part of the urinary tract, impaired renal function, infection, malnutrition, acidosis and even uremia. *Parenchymal destruction, rather than obstruction* of the lower part of the urinary tract, proves fatal. Common symptoms observed in patients with obstruction of the lower part of the tract include straining to urinate, overflow incontinence, retention of urine and bedwetting. Chills and fever, associated with pyuria, are common. Diurnal wetting in older children may be a significant sign. The diagnosis is made cystourethroscopically.

No single type of treatment has been uniformly successful. Removal of the primary lesion and secondary plastic repair are usually advisable, although simple dilation may suffice. Long-term drainage is needed when there is damage to the upper part of the tract. Deakin stated that T-tube ureterostomy with endoscopic resection of the vesical neck is the treatment of choice. Postoperative dilation is required. The age of the patient governs the approach, since the urethral calibre must be large enough to accommodate an instrument of adequate size if transurethral therapy is considered. In Burns' opinion this factor rules out endoscopic treatment for children less than 4 years old and that an open direct approach to the neck of the bladder is best for these patients, with revision of the obstructive area. We have used the infant (12 F) McCarthy resectoscope in this region with some degree of success, but essentially we agree that resection is best done by larger instruments in older children with larger urethras. The prognosis depends upon the extent of damage to the upper part of the tract.

The problem of retrograde ejaculation following transurethral resection proximal to the verumontanum is of grave im*port. Ten years ago a 14-year-old boy* was examined who had passed blood in his urine after abdominal trauma during a football game. A greatly distended bladder and a bilaterally dilated upper *portion of the urinary tract were observed* (Fig. 7, *A* and *B*). Endoscopic resection of the contracted neck of the bladder was carried out on two occasions during the next three years (Fig. 7*C*), resulting in progressive improvement in function of the upper portion of the tract (Fig. 7*D*). The patient is now 24 years old, married, and wants children. The urethroscope revealed backward tilting of the orifices of the ejaculatory ducts, due to proximal urethral scarring. The patient has retrograde ejaculations. He and his wife now speak *in terms of bitterly disappointed parent*hood.

Acquired Obstructions.—1. *Inflammation:* a. *Inflammatory stricture* is the most common acquired urethral obstruction and is reported by some authors as comprising 90 per cent of all urethral strictures. It is usually observed in persons 25 to 50 years of age. Strictures resulting from gonorrhea or nonspecific urethritis are of wide calibre and usually involve the bulbous area of the anterior part of the urethra (Fig. 8*A*). Ten per cent of these *are multiple, and the narrowest stricture* lies posteriorly. The opening of the stricture is usually round. In the gradual pathologic process, mucosal inflammation is followed by fibroblastic infiltration, destruction of the lining membrane, submucosal fibrosis and periurethral glandular reaction. Thrombophlebitis of the corpus spongiosum results in further obstructive scarification of the urethral canal. The symptoms include obstruction, infection, painful erection, retrograde ejaculation, epididymitis and gleet. Urethrographic study may reveal the length, calibre, multiplicity and location of the stricture. It also determines whether the stricture is impenetrable. These observations are confirmed urethroscopically and by instrumentation.

Primarily, inflammatory strictures are best treated with urethral dilation. It has been postulated that such dilation may lead to the absorption of scar tissue. Strictures tend to contract after dilation, and the frequency of treatment is dependent upon individual response. It is best to start with a larger dilator and drop down to one of an acceptable calibre. These instruments should never be forced. If the calibre is 16 F or less, we tend to use flexible filiforms and followers. We never use a rigid instrument unless the calibre is at least 18 F, since we are convinced that smaller rigid instruments are too sharply pointed and may cause false passages. We consider that the easy passage of a 26 F sound indicates a good result. We inform the patient that this is a long-term, perhaps permanent condition that requires regular treatment. Initial dilation may be intermittent or continuous. In the continuous type, difficult insertion may require tying the dilator in place and keeping the patient at bed rest. Without retention, intermittent dilation usually suffices. The dangers are false passage, bleeding with clot formation, and infection.

If the strictures resist dilation, a variety of surgical procedures is available, starting with external meatotomy. Many texttooks condemn internal urethrotomy as a dangerous and outmoded procedure. Not only in our practices, but in those of many of our colleagues, we have been gratified to learn that this is not the case. If done carefully, it is a simple, effective procedure, especially in the anterior portion of the urethra. The precautions include asepsis, hemostasis and careful incision. The incision is made from within outward. We have been accustomed to a dorsal incision, but Emmett stated that he noted no difference whether the cut was made ventrally or dorsally. If the stricture accepts only a filiform, the Maisoneuve urethrotome is preferred. For strictures of large calibre which re-form rapidly, the Otis urethrotome is employed. Immediate postoperative dilation to 26 F or 28 F is advised. External urethrotomy or stricture resection may be necessary for extensive, rigid, impassable strictures, which commonly occur in the bulbomembranous area, and also applies when perineal fistulas occur (Fig. 8*B*).

The local injection of hydrocortisone has been reported by Lyons and Bonner to inhibit fibroblastic proliferation. They consider the success of treatment unrelated to the duration of the stricture. Raines and his co-workers, after sounding, have used oral pregnisolone effectively to prevent the re-formation of strictures.

b. *Tuberculosis of the urethra* is relatively uncommon. Ulceration of subepithelial tubercles tends to form fibrosis and subsequent strictures, which are usually located in the posterior portion of the urethra. Such strictures are obstructive, dense and resistant to all forms of therapy. Diversion of urine may be necessary.

c. *Urethritis secondary to an indwelling catheter* left for a long period is another cause of the formation of inflammatory stricture leading to obstruction.

d. *Acquired phimosis* may be traumatic or inflammatory. The elastic fibers of the prepuce are destroyed. Fibrosis occurs, together with abnormal narrowing of the preputial opening and urethral obstruction. Inflammatory causes include balanitis, lack of cleanliness, venereal disease and incontinent dribbling of urine.

c. *Paraphimosis* is a condition in which the glans penis is strangulated by a tightly retracted prepuce, the urethra is compressed and obstruction results. A certain degree of phimosis preexists. Paraphimosis is a common complication of inflammatory urethral disease. Early reduction of the strangulated tissue and treatment of the causative urethral inflammatory disease are advised, both for phimosis and paraphimosis. Division of the constricted area by dorsal slit or circumcision must be considered.

f. *Inflammatory hypertrophy of the verumontanum* so severe that urethral obstruction resulted, has been described by Campbell. This condition has been ascribed to sexual irregularity, with repression, coitus interuptus and chronic masturbation playing major roles. We have not been able to substantiate the cause-and-effect relations with any regularity.

2. *Acquired Traumatic Obstruction:* a. The commonest sequal to urethral trauma is the formation of obstructive strictures. Such strictures are extremely dense, and their openings are irregular in outline. *Internal trauma* may be the result of overzealous instrumentation in an already diseased urethra. Creation of false passages may occur, or penetration of the rectum may result. These complications are often present when urethral pathologic conditions already exist. Instrumental overdistention of the urethral lumen has been responsible for numerous strictures, either at the fossa navicularis or in the bulbomembranous portion of the urethra (Fig. 9). Five per cent of all patients on whom transurethral prostatic resections are performed are said to present such strictures. We have attempted to prevent this by calibrating the urethra preoperatively and gently dilating it to the required instrumental calibre. We cannot overemphasize the importance of using well-lubricated instruments; we always retroject lubricating jelly directly into the urethra prior to instrumentation. Emmett and his colleagues have advocated preliminary internal urethrotomy to prevent strictures occurring after transurethral resection. They so treated 450 patients whose urethral lumens measured less than 26 F at the external meatus and 36 F in the bulbous portion. Emmett and his collaborators estimated that this procedure was needed prior to 22 per cent of all transurethral operations done by them.

b. *Burns of the urethra* are uncommon. Formerly, caustic solutions were used to treat inflammation and as prophylaxis against venereal disease. Silver nitrate, bichloride of mercury and alcohol were the most common agents. The injury was usually aggravated by passage of instruments. Immediate mucosal swelling occurred, followed by mucosal slough, formation of stricture and then obstruction. Idiosyncrasy to intraurethral medications may cause allergic reactions similar to chemical burns. The mercurials are the agents chiefly responsible. Electrical burns may occur owing to faulty insulation of electrodes during resection or cauterization. Strictures resulting from burns are long and extensive. They usually follow the direction of the solution or electric current that caused the reaction and are highly resistant to dilation.

c. *External urethral trauma* usually results in rupture of the urethra, extravasation of urine, suppuration in the fascial planes and formation of stricture. Separation of the symphysis pubis, often associated with fracture of the pubic bones, traumatizes the urethra behind the triangular ligament and may involve the neck of the bladder. Extravasation into the prevesical space and the region of the inner thigh is not uncommon.

Straddle injury of the bulbous portion of the urethra is fairly common and may be followed by extravasation of urine in front of the triangular ligament traveling beneath Colles' fascia and up over the abdomen. Penetrating wounds within the triangular ligament of the membranous portion usually extravasate about the prostate and through the ischiorectal space. Adequate early repair of the ruptured urethra minimizes stricture formation.

3. *Urethral Spasm: Spasmodic strictures of the urethra* have been reported which are neither congenital nor acquired. These obstructions are temporary and may be due to contracture of the deep urethral muscles, particularly the external sphincter, and to edema of the neck of the bladder. In our experience this condition is usually of psychic origin. Spasm may occur on the basis of irritation from a foreign body, inflammation, rapid or forceful instrumentation, intercourse, masturbation, and alcoholic or physical overindulgence. Overheating and chilling may be causative factors. Fiedler reported having observed this condition in association with pneumonia, cerebral accident, cardiac decompensation and unrelated surgical procedures. In his opinion it is commonly associated with rectal distress. The differential diagnosis is difficult when true organic stricture is present. Urethrographically a smooth constricted area is demonstrable. Treatment consists of local anesthesia, heat, antispasmodics, gentle pressure and reassurance.

4. *Urethral Tumors*: Granulomatous urethral lesions, associated with inflammation or trauma, are more prevalent than true urethral tumors. Growths are commonly associated with strictures. The greatest incidence of urethral tumor is reached in the sixth decade of life. Benign urethral tumors (papillomata and polyps) commonly occur in the posterior portion and are usually near the verumontanum. Local excision is the treatment of choice.

The anterior portion of the urethra is the common site of malignant urethral tumors. The majority occur in the bulbous portion (Fig. 10), although the fossa navicularis is another common site. The onset is insidious and may be associated with perineal swelling, priapism, infection, ulceration and progressive obstruction. Regional adenopathy is not uncommon. Tumors of the bulbous portion often involve deep, inaccessible pelvic nodes, but tumors of the fossa navicularis usually spread to the more accessible inguinal glands. Unfortunately, metastases usually occur before the diagnosis is made. Complete removal of the growth is the best therapy. Radical dissection of the involved nodes is governed by the extent of the spread as well as the site of the growth.

5. *Foreign Bodies:* The urethra is an easily accessible portal of entry for many obstructive foreign bodies. Thermometers, bits of paper and wood, chewing gum, candles and thread are but a few of the objects that have been reported. Usually these foreign bodies have been inserted by children, senile persons, sexual perverts, intoxicated persons and the mentally disturbed. Iatrogenically introduced foreign bodies result from broken instruments, such as bits of resectoscope sheaths, endoscopic forceps and torn pieces of catheters. The obstructive symptoms are dependent upon the size of the foreign body and the duration of its presence. The formation of stone about a foreign body is not uncommon. The diagnosis is readily made by palpation and by urethroscopic

and roentgenographic examination. The treatment is removal of the object in the least traumatic way possible, preferably by a closed method.

6. *Urethral Calculi:* These commonly occur behind strictures, especially in the narrow membranous portion of the urethra. The next most frequent site is at the narrowed edge of the fossa navicularis. The calculi are usually solitary and small. Primary urethral stones may arise from the prostate, about a foreign body, or may form proximal to a stricture. They are soft, small and often nonopaque. The usually associated stricture prevents adequate direct visualization of these objects. They are best located with a sound or by urethral palpation. The use of nonopaque air contrast urethrographic procedures is suggested. The symptoms are usually of long duration, and the calculi grow slowly until they progress to the point of urethral obstruction. Secondary urethral stones descending from the upper portion of the tract are more common (11:1). They are usually radiopaque and are easily located on roentgen examination. The anterior portion of the urethra is usually normal in these cases. Symptoms include perineal or penile pain and hematuria, followed by sudden stoppage of urine. The stone may be palpable. Treatment consists of removing the stone transurethrally, if it is small. An open operation is often necessary to remove large and impacted stones.

7. *Prostatic Abscess:* This is not a common lesion. It is characterized by painful urination, chills and fever, perineal pain and a sense of perineal fullness. Urinary obstruction is often reported. Rectal palpation usually reveals an enlarged, warm, tender, asymmetric gland, which may be fluctuant. Incision and drainage are advised.

8. *The Enlarged Prostate:* Enlargement of the prostate is a common cause of urethral obstruction in elderly patients. Much has been written about this condition. Briefly, symptoms of progressive obstruction develop for some time. Rectal palpation and urethrocystoscopic study confirm the diagnosis. Urethrographic examination usually reveals a urethra elongated in its posterior portion. In a patient with purely median lobe hypertrophy there is a forward tilt of the prostatic portion. In patients with hypertrophy of the lateral lobe there is increase in the anteroposterior urethral diameter, with side-to-side flattening. We attempt to reconstruct the vesical neck after open prostatic enucleation, thus hoping to avoid postoperative obstructive narrowing. Prostatic malignant lesions must also be mentioned, primarily the sarcomas; these cause pronounced urethral obstruction.

COMMENT AND SUMMARY

A brief review of the commoner causes of urethral obstruction is presented, emphasizing congenital phimosis, stenosis of the external urinary meatus, valve of the posterior urethra, and contracture of the vesical neck. Acquired inflammatory and traumatic strictures are considered, as well as foreign bodies, calculi and tumors. Basically, treatment is aimed at promoting an adequate flow of urine by removal of the lesion or urethral dilation. The history, embryonic background and anatomic aspects of the urethra are considered.

In the authors' review of 98 recent cases of urethral obstruction, 50 examples of congenital meatal stenosis in infants were included. In 3 of these the condition was associated with hypospadias. Contracture of the neck of the bladder was noted in 11 patients (7 children and 4 adults). Thirty-four urethral strictures were observed in adults (11 anterior and 23 posterior). Obstructive urethral tumors were present in 3 patients. It is obvious

Common Types of Urethral Obstruction

A—*Congenital*
- Absence of urethra
- Imperforation of urethra
- Cyst of external urinary meatus
- Phimosis
- Stenosis of external urinary meatus
- Stenosis of urethral canal
- Valves of posterior urethra
- Hypertrophy of verumontanum
- Obstruction of vesical neck

B—*Acquired*

I. Inflammatory
  - Strictures:
    - Gonorrheal
    - Non-specific disease
    - Tuberculosis
    - Indwelling catheter
  - Phimosis
  - Paraphimosis
  - Hypertrophy of verumontanum

II. Traumatic
  - Internal
    - Instrumentation
    - Burns
    - Allergies
  - External

III. Spasm

IV. Tumor

V. Foreign body

VI. Calculi

VII. Prostatic abscess

VIII. Prostatic hypertrophy

from these figures that congenital meatal stenosis in infants is quite common. The authors encourage their colleagues in other fields than urology, primarily pediatricians and general practitioners, to be aware of the signs and significance of this condition; this may account for the large number of such cases in their series. Their technic of meatotomy is detailed, and a newly designed set of urethral meatal dilators is described. There is also a surprisingly large number of posterior urethral strictures in this list, which may be due to an overlapping error in classification of bulbomembranous strictures. The most prominent causative factors were instrumentation and postgonorrheal urethritis.

The need of early recognition of these obstructive lesions is emphasized. Prompt, adequate treatment must be given to prevent irreversible damage to the upper part of the urinary tract.

ZUSAMMENFASSUNG

Es wird ein kurzer Überblick über die häufigeren Ursachen der Undurchgängigkeit der Harnröhre gegeben. Hervorgehoben werden die kongenitale Phimose, die Verengung der äusseren Harnröhrenöffnung, die Klappe der hinteren Harnröhre und die Verengerung des Blasenhalses.

Weitere Erwähnung finden entzündliche und traumatische Strikturen, Fremdkörper, Harnsteine und Geschwülste. Die Behandlung hat grundsätzlich die Schaffung eines ausreichenden Harnabflusses durch Entfernung des Hindernisses oder durch Erweiterung der Harnröhre zum Ziel. Auf die Geschichte dieses Krankheitszustandes, die embryologischen Hintergründe und die anatomischen Verhältnisse der Harnröhre wird eingegangen.

Unter den von den Verfassern nachuntersuchten 98 neuen Fällen von Harnröhrenverstopfung befinden sich 50 Beispiele angeborener Verengerung der Harnröhrenöffnung bei Kleinkindern. In drei Fällen war die Erkrankung mit Hypospadie vergesellschaftet. Verengung des Blasenhalses wurde bei 11 Kranken (7 Kindern und 4 Erwachsenen) beobachtet. Verstopfende Geschwülste der Harnröhre bestanden bei der Kranken. Aus diesen Zahlen geht hervor, dass die angeborene Stenose der Harnröhrenöffnung bei Kleinkindern ziemlich häufig ist. Die Verfasser fordern die Ärzte, die keine Urologen sind, besonders Kinderärzte und Allgemeinpraktiker auf, die Symptome und die Wichtigkeit dieser Erkrankung im Auge zu behalten. Die von den Verfassern angegebene Technik der Operation der Harnleiteröffnung ist genau ausgearbeitet, und eine neu entworfene Serie von Erweiterungsinstrumenten für die Harnröhrenöffnung wird beschrieben. Das Kranken-

material der Verfasser enthält auch eine erstaunlich grosse Anzahl von Strikturen der hinteren Harnröhre, was vielleicht auf eine Überschneidung mit bulbomembranösen Strikturen durch irrtümliche Klassifizierung zurückzuführen ist. Die hervorragenden ursächlichen Faktoren bestanden in instrumenteller Behandlung und in postgonorrhoischer Harnröhrenentzündung.

Die Notwendigkeit frühzeitiger Erkennung dieser obstruierenden Erkrankungen wird hervorgehoben. Zur Vorbeugung irreversibler Schädigungen der oberen Harnwege muss sofortige und ausreichende Behandlung erfolgen.

RÉSUMÉ

Une brève revue des cause les plus courantes de l'obstruction uréthrale est présentée. Les auteurs insistent sur le phimosis congénital, la sténose du méat urinaire externe, la valve de l'urèthre postérieur et la contracture du col vésical.

Les rétrécissements acquis inflammatoires et traumatiques sont assimilés aux corps étrangers, aux calculs et aux tumeurs. La base fondamentale du traitement consiste à créer un écoulement urinaire suffisant par l'extirpation de la lésion ou par la dilatation uréthrale. L'historique, le tableau embryonnaire et les aspects anatomiques de l'urèthre sont analysés.

La série étudiée par les auteurs—98 cas récents d'obstruction uréthrale—comprend 50 exemples de sténose congénitale du méat dans la première enfance; 3 de ces cas présentaient un hypospadias associé. Une contracture du col de la vessie a été constatée chez 11 malades (7 enfants et 4 adultes), et dans 3 cas des tumeurs de l'urèthre. Il ressort de ces chiffres que la sténose congénitale du méat est très courante dans la première enfance. Les auteurs encouragent leurs collègues spécialisés dans d'autres domaines que celui de l'urologie—particulièrement la pédiatrie et la médicine interne—à tenir compte de cet état dans leurs examens. Leur technique de méatotomie est exposée et s'accompagne de la description d'un nouveau jeu de dilatateurs pour le méat urinaire.—Cette série de cas comprend également un nombre étonnemment élevé de rétrécissements postérieurs de l'urètre, qui pourraient être dû à un chevauchement d'erreurs dans la classification des rétrécissements bulbomembraneux. Les facteurs responsables les plus importants sont l'uréthrite instrumentale et postgonorrhéique.

RIASSUNTO

Viene fatto un elenco delle cause più frequenti di ostruzione dell'uretra, con particolare riguardo alla fimosi congenita, alla stenosi del meato urinario, alla valvola dell'uretra posteriore e alla contrattura del collo vescicale.

Vengono prese pure in considerazione le stenosi traumatiche, i corpi estranei, i calcoli e i tumori. Sostanzialmente la cura viene diretta versol l'asportazione dell'ostacolo e il ripristino di un normale flusso urinario. Viene trattata, inoltre, la storia, l'embriogenesi e l'anatomia dell'uretra.

In una rassegna di 98 casi di ostruzione dell'uretra, sono incluse 50 stenosi congenite del meato nell'infanzia; in 3 di questi malati vi era anche un'ipospadia, in 11 (7 bambini e 4 adulti) una contrattura del collo vescicale, in 3 vi erano tumori ostruenti dell'uretra. Da questi dati resulta che le stenosi meatali congenite sono abbastanza frequenti nei bambini. L'autore raccomanda ai colleghi, e soprattutto ai pediatri e ai medici generici, di far attenzione ai segni e al significato di questa affezione. Egli descrive la technica della meatotomia e l'impiego di un nuovo apparecchio dilatatore dell'uretra. Nell'elenco vi è anche un cospicuo numero di stenosi dell'uretra posteriore la cui causa princi-

pale è l'impiego di strumenti e l'uretrite gonococcica.

Queste lesioni debbono essere riconosciute precocemente e trattate adeguatamente per prevenire lesioni irreversibile delle vie urinarie prossimali.

SUMARIO

Apresenta uma revisão das causas mais comuns da obstrução uretral, salientando a fimose congenita, a estenose do meato urinario, valvula da uretra posterior e contratura do colo vesical.

Cita as estenoses inflamatorias e traumaticas, corpos extranhos, calculos e tumores. Descreve os objetivos do tratamento fundamental e os aspectos embiologico, anatomico da uretra.

O A. teve 98 casos recentes de obstrução uretral, inluindo 50 casos de estenose meato de origem congenita, sendo 3 associados com hipospádia. Contratura do colo vesical em 11 casos e obstrução tumoral em 3 pacientes. O A. salienta os pediatras e clinicos a verdadeira significação e sintomatologia dessa afecção. Descreve a técnica da meatotomia e apresenta um novo tipo de dilatador. Diz que há um número imenso de estreitamento uretrais posteriores nesta lista devidos a um erro de classificação dos estreitamentos bulbomembranosos. Como causas etiologicas cita a instrumentação e a uretrite gonococcica.

Descreve cinco casos de paralisia cerebral complicada por epilepsia ou defeitos mentais. As idades variaram entre 9 mêses e meio e 7 anos e meio. Todos foram *necropsiados* e os 4 casos mencionados de angioma foram observados. Biopsias dos regiões frontal, parietal, occiptal e cerebelar sem evidencia de porencefalia. Essasobservações, na opinião do A., podem causar modificações encefalicas devidas aos angiomas, possivelmente, de carater reversivel: a excisão do tecido doente durante a operação concedeu uma oportunidade de recuperação á criança. Nos sobreviventes registraram-se melhorias sob determinados aspectos.

RESUMEN

Se trata de una breve revisión de las causas más frecuentes de obstrucción ureteral con especial mención de la fimosis congénita, la estenosis del meato urinario externo, la válvula de la uretra posterión y la contractura del cuello vesical.

También se estudian las estrecheces traumáticas e inflamatorias así como los cuerpos extraños, los cálculos y los tumores. Esencialmente el tratamiento tiende a buscar una salida fácil de la orina por la extirpación del obstáculo o por la dilatación. Se estudian especialmente la historia, el desarrollo embrionario y la anatomía patológica.

En una revisión de 98 casos recientes de obstrucción uretral hecha por el autor hay que incluir 50 de estenosis congénita del meato en niños, en tres de los cuales existí también hipospadias. En once enfermos (7 niños y 4 adultos) se trataba de contractura del cuello vesical. En tres enfermos la obstrucción se debía a tumor. Estas cifras dan evidencia de que la estenosis del meato es la causa más frecuente de obstrucción ureteral en los niños. Los autores llaman la atención de sus colegas de campos distintos a la urología, pedíatras y médicos generales para que estén atentos a la presencia de la estrechez del meato. Describen a continuación su técnica operatoria y presentan una nueva serie de dilatadores ureterales de su invención. En esta estadística se estudia también un número considerablemente importante de estrecheces ureterales posteriores. Sus causas más frecuentes son traumas instrumentales y uretritis postgonocócica.

Se llama la atención sobre la importan-

cia del diagnóstico precoz en tales lesiones obstructivas. El tratamiento debe ser precoz para prevenir lesiones irreversibles del tracto urinario superior.

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Obesity is a factor in the production of high blood-pressure: so when the doctor reduces the fat man's weight, he usually sees his blood-pressure fall. It has been estimated that every pound of fat requires six tenths of a mile of blood-vessels. A man who is twenty pounds overweight is carrying round twelve miles of excess blood-vessels. No wonder his heart is strained!

— *Major*

Lavage of the Endometrial Cavity as an Aid in the Diagnosis of Carcinoma of the Uterine Corpus

A Progress Report*

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THIS report represents an extension of efforts begun in 1954 and described in 1957[1] on the subject of lavage of the endometrial cavity as an aid in the diagnosis of endometrial carcinoma. There has been great need for a more reliable office test than the vaginal smear when the possibility of corpus carcinoma existed. Since the reliability of the vaginal smear method in diagnosing carcinoma of the endometrium has been only 40 to 50 per cent, whereas for cervical carcinoma it has been 85 to 90 per cent, it was concluded that the difference might lie in less representative material in the former instance. The purpose of our studies was to develop and evaluate a method for obtaining better specimens from the uterine cavity for cytologic study than were provided by the ordinary vaginal smear.

Our approach involved *lavage* of the endometrial cavity with 2 to 4 cc. of sterile physiologic solution of sodium chloride, collection and centrifugation of this solution after it flowed back into the vagina and subsequent smearing and staining of the residue for cytologic study. Dilute hydrochloric acid was used before staining to hemolyze red cells when the specimen was bloody. The method was described in detail in our original article and will not be repeated here. Our preliminary results showed that carcinoma of the upper part of the tract was indicated by this test in 92.3 per cent of the cases in which it actually existed. With similar purpose in mind, Hect[2] and Reagen and Sommerville[3] have reported the use of *aspiration* of the endometrial cavity as a means of obtaining more representative material for cytologic study, and both have obtained excellent results also.

Our material is presented in Table 1. Although we have obtained lavage specimens from 1,265 unselected patients (through October 1957), we shall confine our attention here to the 398 patients in whose cases histologic confirmation was provided by curettage and/or hysterectomy. In this group there were 46 carcinomas of the upper part of the genital tract; 44 were endometrial adenocarcinomas, 1 was a sarcoma

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and 2 were ovarian adenocarcinoma. Cytologic examination of the lavage specimen led to the correct suspicion of carcinoma in 40 of the 46 cases, or 87 per cent. Carcinoma cells were not detected (or correctly interpreted) in 6 of the 46 cases. This degree of proficiency approaches closely that obtained with ordinary vaginal smears in the diagnosis of cervical carcinoma (Table 2).

We have restudied our material carefully to see whether the reason for failure in the 6 cases could be discovered. Actually, in the case of one of the 6 patients, the result was classified as a "false negative" on the basis of an original normal lavage specimen in a 44-year-old woman complaining of menometrorrhagia, although a correct positive result was obtained two months later when the patient returned with a recurrence of symptoms. This result might have been classified as a "correct positive" with considerable justification. This would have raised the percentage of correct positive reactions to 90. In another of the 6 cases, a second lavage specimen revealed a correct positive result, whereas the initial specimen showed no carcinoma. In this instance we were looking for the positive results since a correct histologic diagnosis had been made in the interval; it cannot be considered diagnostically significant.

TABLE 1.

Total number of patients investigated	1265
Total number of patients investigated with histological confirmation	398

TABLE 2.—*Results in the 398 Cases Verified Histologically*

Carcinoma of the upper part of the genital tract	46
Suspected on basis of lavage	40
Missed on lavage	6
Per cent correct	87

(As of Nov. 1, 1957)

TABLE 3.—*False Positive Results in the 398 Histologically Verified Cases*

	False Positive	*Squamous Ca+ Endometrial Ca—*	*HE*
Original interpretation	19		
Reevaluation	7	2	10

(As of Nov. 1, 1957)

> *Recognizing the need of a reliable office test for carcinoma of the uterine fundus, the authors have resorted to cytologic examination of a lavage specimen from the uterus, with good results. Positive results were obtained in approximately 90 per cent of the cases in which malignant disease was actually present. A fair number of false positive results are encountered. The possible reasons for these errors are analyzed. It is pointed out that a considerable amount of experience in reading endometrial smears is requisite to the best possible results. Fortunately, the authors add, a false positive diagnosis involves no serious consequences, meaning only that a curettage may be performed that later proves to have been unnecessary, and this at least is an error on the side of caution. Conversely, the test, once brought to perfection, would eliminate the need of curettage in many cases.*

We were not able to explain the false negative results in the other 4 cases. It did not appear that we had failed to recognize suspicious or frankly malignant cells, but rather that the lavage had failed to produce such cells, although there seemed to be adequate numbers of cells for study

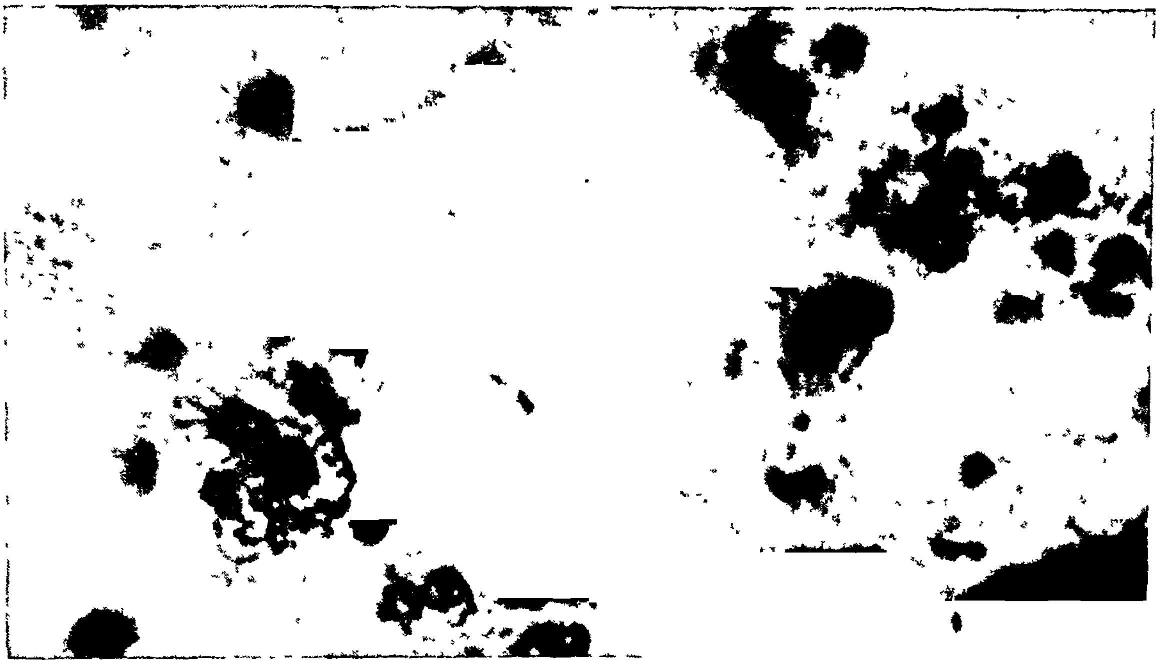

Fig. 1.—Clumping of cells in lavage specimen, with hyperchromatic nuclei resulting from superimposition (see text).

in 5 of the 6 cases. The possibility must be considered that in some 10 to 15 per cent of cases the technic itself cannot be relied upon to carry malignant cells down into the vagina. This point will have to be settled by further investigation.

Table 3 shows our false positive results. In our original interpretation there were 19 such results. From a practical standpoint, it would not matter so much if a significant proportion were called "suspicious" or "positive" erroneously—it would only mean that the women concerned would be subjected to a curettage that later would prove to have been unnecessary. In searching for explanations of these mistakes, however, our false positive results were carefully restudied. Subsequent columns in Table 3 show that upon reevaluation there were only 7 false positive results and 2 cases in which the lavage specimen revealed squamous carcinoma cells but gave negative results for endometrial carcinoma. The remaining 10 cases of the original 19 with false positive results were classified as IIR, meaning that they gave no definite evidence of carcinoma cells but showed clumps of cells that could not be interpreted because of crowding; in such instances, we are *now* convinced that no diagnosis can be made and that repeat specimens should be examined.

The chief sources of error leading to false positive diagnoses were (1) clumping of cells, in which event cellular detail usually could not be made out and the nuclei appeared hyperchromatic because of superimposition (Fig. 1) ; (2) the presence of rather dyskariotic endocervical cells which, we observed, could be much more bizarre than endometrial cells and still remain in the benign (Fig. 2) category; (3) cannibalism, resulting in cells filled with nuclear remnants which obscured the true nucleus of the epithelial cells (Fig. 3),* and (4) the presence of squamous carcinoma

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*This feature was observed in both benign and malignant cells and often obscured the diagnosis.

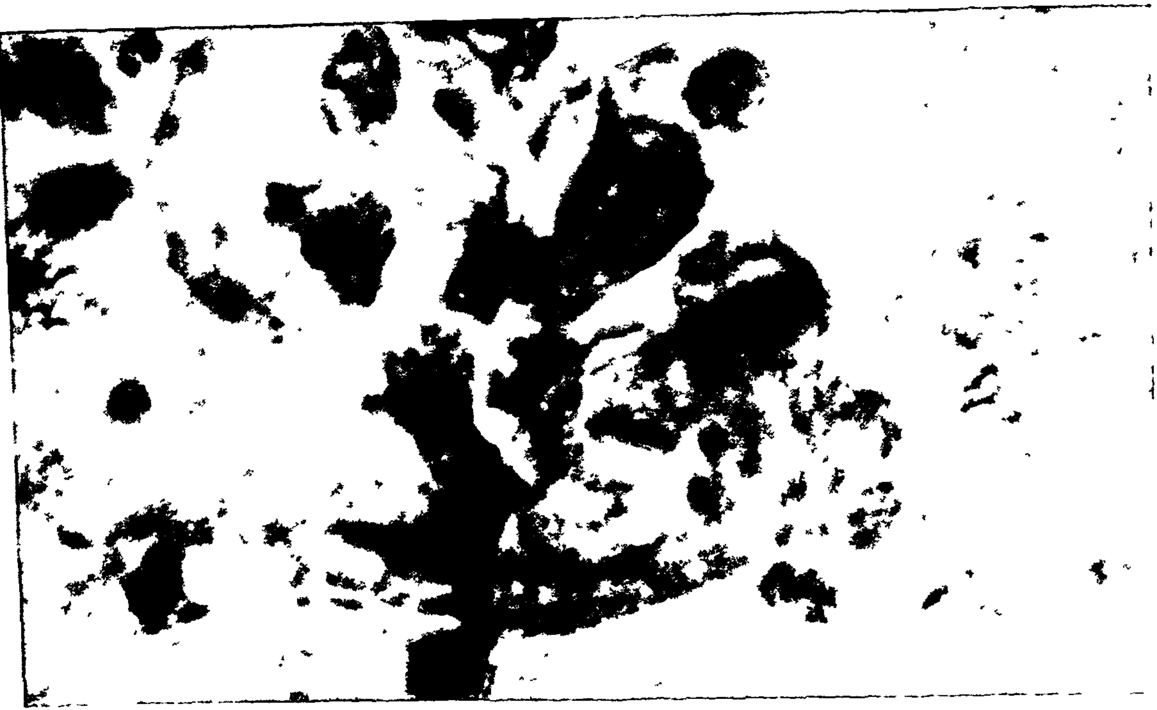


Fig. 2.—Bizarre but benign dyskariotic cells (see text).

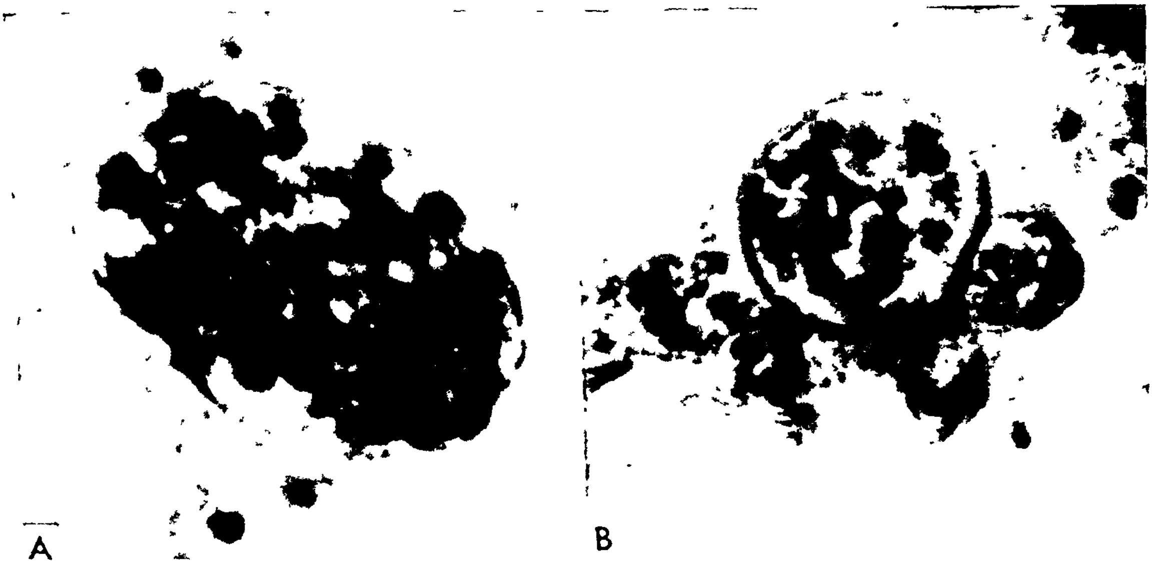
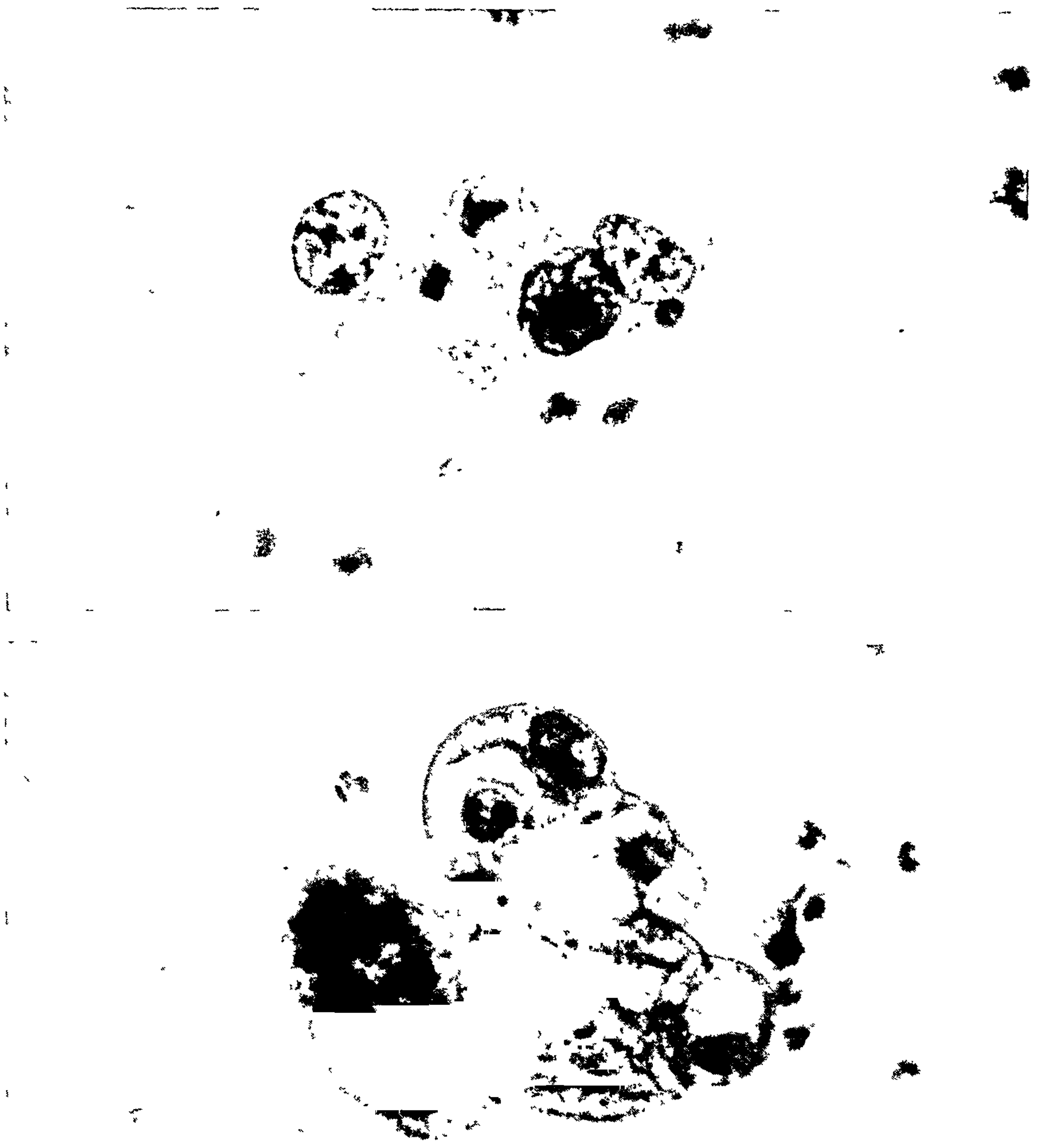


Fig. 3.—Cells filled with nuclear remnants obscuring true nuclei of epithelial cells (see text).

(in 2 cases). It may be that it will never be possible to avoid making false positive diagnoses in a significant number of cases, although, of course, continued study has enabled us to detect our errors much more readily now than in the beginning. As has been pointed out, false positive diagnoses are not serious, since they do not lead to neglect. Figures 4 and 5 show examples of true positive diagnosis, later confirmed histologically.

No complications have been associated



Figs. 4 *(above)* and 5 *(below)*.—Lavage specimens revealing true positive diagnosis, later confirmed histologically.

with the use of the lavage technic. While it is theoretically possible for the solution to traverse the tubes, carrying tumor cells or infection into the peritoneal cavity, thus far there has been no evidence of either. A sterile solution is employed, and only 2 to 4 cc. is injected (under low pressure), depending upon the size of the uterus. On occasion the external cervical os is so small and tight that even a small cannula cannot be introduced. Such a patient can be investigated only in the operating room under anesthesia.

Of special interest are the results in women who complain of bleeding, for it is probably only in these individuals that one would feel called upon to make an investigation of this type. In this respect, the lavage technic differs from the ordinary vaginal smear, which it is logical and wise to employ in all women whether they have symptoms or not. Table 4 depicts the results in the 299 cases with histologic verification in which menorrhagia, metrorrhagia or menopausal and postmenopausal bleeding were the presenting symptoms. As might be expected, the vast majority of the carcinomas of the upper part of the tract occurred in those who complained of bleeding at the time of the menopause or in the postmenopausal years. Thirty-nine of the 45 carcinomas in this group of patients were suspected on the basis of the lavage specimen. Actually there is little need for such a test in the cases of women with frank postmenopausal bleeding for they must be subjected to curettage in any circumstances. Careful study of the histories of the 136 women in our series with menopausal and/or postmenopausal bleeding revealed that in 18 per cent the bleeding had returned after a period of amenorrhea of less than twelve months (usually less than six months) or spotting had been noticed in association with hormone therapy or hypertension, or the patient was in doubt as to whether spotty bleeding had occurred from the vagina, the bladder or the rectum. These women, as well, no doubt, as many of those who have menorrhagia at an earlier age, were probably bleeding for some reason other than the existence of a neoplasm; yet one feels obligated in such cases to perform a curettage in the absence of some additional reassurance, such as a negative result from lavage might afford (Table 5). This is not to suggest that curettage should be replaced, but only that it could sometimes be deferred or even eliminated if there were an office test such as the one described which could be relied upon to indicate normal conditions—or the opposite. Obviously, if bleeding persisted or recurred even in spite of a normal lavage specimen, curettage would be indicated.

Curettage is a minor procedure and should not be avoided if there is any doubt; nowadays, however, hospitalization for even such a minor operation involves a considerable amount of disability and economic burden.

TABLE 4.—*Results in 299 Cases Verified Histologically in which Menorrhagia, Metrorrhagia or Postmenopausal Bleeding Was the Presenting Symptom—(Omits One Positive Lavage in Patient Without Bleeding)*

	Cases	*Positive Lavage*	*Positive Histology*
Menorrhagia	47	0	1
Metrorrhagia	116	1	1
"Menopausal" and "postmenopausal" bleeding	136	38	43

(As of Nov. 1, 1957)

TABLE 5.—*Justification*

In the puzzling group of 136 cases of "menopausal" and/or "postmenopausal" bleeding, the following were instances in which the bleeding was *not* clearly postmenopausal:

	Cases	*Total Group*	136
Recurrence of bleeding after less than 12 months of amenorrhea	15		
Postmenopausal spotting due to hormones, hypertension, or other causes not clearly vaginal	11		
	26	Per cent	18

(Eighteen per cent might logically have been investigated by lavage.)

dade quando há carcinoma presente. Analisa as posiveis razões dos casos de testes duvidosos. Uma grande experiencia do citologista é necessaria para correta leitura das laminas. Felizmente um falso positivo não é muito serio, indicando apenas que algumas poucas mulheres foram submetidas á curetagem. Para confirmação de um teste "positivo" ou pelo menos quando houver dúvida como pode ocorrer quando as hemorragias voltam ou persistam apos um teste "negativo" o tecido endometrial deve ser submetido á histologia depois da curetagem.

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Rembrandt f.

The Anatomy Lesson of Professor Deyman, by Rembrandt. This Rembrandt picture is less well known than the "Anatomy Lesson of Professor Tulp." It shows the cadaver with the abdomen already dissected and the anatomist at work on the brain, which has been exposed. One of the criticisms of Rembrandt has been his designing of the nude, in which it is said that the whole figure was often out of proportion, the hands and feet too large or too small. In spite of the allowance for foreshortening in the present picture, some of these defects may be recognized. (Reproduced by courtesy of the Rijksmuseum, Amsterdam, The Netherlands.)

—*Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)*

Carbonic Anhydrase Inhibitors: Their Effect on Water and Electrolyte Metabolism in Toxemia of Pregnancy*

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The administration of acetazolamide, a carbonic anhydrase inhibitor, increases the urinary excretion of sodium, chloride and potassium. It decreases the excretion of ammonia and the titratable acidity in toxemic patients with excessive extracellular fluid volume. Acetazolamide is an effective natriuretic agent for toxemic pregnant or puerperal patients.

The daily administration of 250 mg. of this agent to patients whose water and electrolyte imbalance has been corrected produces minimal natriuretic and water-diuretic effect but a pronounced kaliuretic effect. This suggests the possibility that continuous administration of the drug to toxemic patients who have no clinical signs of excessive extracellular fluid volume may result in hypokalemia.

Even though no obvious toxic effects were noticed in the mothers or babies with the schedule of dosage used in this study, it would seem desirable to maintain vigilant control over not only the total dose of acetazolamide but the duration of its administration.

TOXEMIA is a serious complication of pregnancy, resulting from an enigmatic derangement of physiologic mechanisms. Treatment is directed toward returning the patient to a state of metabolic homeostasis, and various means to attain this end are available. Of course, attentive vigilance over the prenatal and puerperal patient, so that any early signs and symptoms of toxemia can be brought under control before the condition becomes advanced, is the best preventive measure against this complication.

Two early warning signs of impending preeclampsia are edema and excessive gain in weight, both of which almost always precede the appearance of proteinuria and hypertension. It seems well established that moderate retention of water and sodium does occur during normal pregnancy and that this retention is greatly augmented in patients in whom toxemia of pregnancy develops.[1] The mechanism responsible for the increased retention of sodium in toxemia of pregnancy remains unknown, but it is the general impression that it may be related to a decrease in glomerular filtration rate, an increase in circulating steroids and an increase in the secretion of antidiuretic substances. There is strong evidence to show that this retention may be mediated through an increase in tabular reabsorption.[2]

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Submitted for publication May [illegible], [illegible].

Since the enzyme carbonic anhydrase deals intimately with the mechanisms involved in the tubular reabsorption of sodium, it would seem logical to evaluate the usefulness of one of its inhibitors in the prophylaxis and treatment of the toxemia of pregnancy. Acetazolamide (Diamox R.) was chosen for this study. This drug is known to inhibit the carbonic anhydrase of the tubular cells, thus causing increased excretion of sodium and potassium. This is accompanied by a decrease in the excretion of ammonia and titratable acidity.[3]

Materials and Methods. — Forty-eight patients with toxemia of pregnancy comprise the study group. These patients were treated during fifty hospitalizations by means of bed rest, a neutral ash salt-free diet, barbiturate sedation, hydration and acetazolamide. On admission, each patient was weighed on a specially designed bedside scale, and the serum sodium, potassium, chloride and carbon dioxide content and the blood urea nitrogen level were determined. Acetazolamide was administered orally in a daily dose of 250 mg. during a first course of three days, discontinued for a three-day rest period, and given again in the same dosage for a second course of three days. Records were kept for each patient on the average daily intake of calories (1,200), sodium (30 mEq. per day), protein (90-100 Gm), neutral ash, and water (3,500-4,000 ml.).

The carbon dioxide content was retested in blood drawn under oil after the first course of acetazolamide, after the rest period and after the second course of the drug, by the method of Van Slyke and J. N. Neil.[4] The serum concentrations of sodium, potassium and chloride were determined daily before breakfast for ten days. Twenty-four hour urine collections were obtained daily during the nine-day study period, and from these the total *per diem* excretion of sodium, potassium and chloride was ascertained. Determinations of serum and urinary sodium and potassium were performed with use of a Baird internal flame photometer (Ser. No. DB-2-302). Serum and urine chloride determinations were done by the method of Schales and Schales.[5] Urinary excretion of ammonia was determined as described by Van Slyke and G. E. Cullen,[6] and titratable acidity as described by Hawk, Oser and Summerson.[7] The p_H of the urine was measured with a Beckman p_H meter.

In order to appraise the differences between pregnant and puerperal patients, we shall consider separately an antepartum and a postpartum group, according to the period in which the study was carried out.

The antepartum group consisted of 13 patients and the postpartum group of 37 in 23 of whose cases the diagnosis was made before delivery and in 14 during the puerperium.

TABLE 1.—*Water Intake and Urinary Output of Patients with Total Toxemia, Ante Partum and Post Partum: Daily Average*

	Antepartum Group			*Postpartum Group*		
	Intake	*Output*		*Intake*	*Output, Ml.*	
	Daily Mean Value, Ml.	*Daily Mean Value, Ml.*	*Standard Deviation, Ml.*	*Daily Mean Value, Ml.*	*Daily Mean Value, Ml.*	*Standard Deviation, Ml.*
1st course	3,700	3,500	890	3,400	3,100	1,100
Rest period	3,700	2,900	1,300	3,400	2,800	818
2d course	3,800	3,200	1,200	3,100	2,800	848

All data obtained from both groups of patients were analyzed statistically. The "Student t" test was used to appraise the differences between the means. Each of the differences encountered was considered significant if the probability of its occurrence by chance was less than 2 in 100. After final classification of the type of toxemia, which was based upon pregravid, antenatal, puerperal and postpuerperal data, mean levels were obtained for each group. The differences between the mean levels in cases of the various types of toxemia were not evaluated statistically, because of the small number of patients with each type.

Results. — 1. *Urinary Excretion of Water:* Accurate records of the intake and output of each patient were kept throughout the period of study. Daily averages of urinary output and water intake were determined for the first course of acetazolamide therapy, for each day of the first course, for the rest period and for the second course (Table 1).

In order to determine the effect of the drug upon water excretion, the means of daily urinary output during each course of acetazolamide were compared with the mean output of the rest period, the exact values of water intake during each of these periods being taken into consideration. The differences observed were small and had no statistical significance. In the antepartum group the urinary output during the first course of acetazolamide administration was 3,500 ml., while during the rest period it was 2,900 ml. This difference, however, could have occurred by chance, the probability being less than 0.05 but greater than 0.02.

2. *Urinary Excretion of Sodium:* In order to estimate sodium excretion, daily determinations of total urinary sodium (mEq. per twenty-four hours) and sodium concentration (mEq. per liter) were performed in all cases. Daily averages were determined for the first course of acetazolamide (days 1, 2 and 3), for the rest period (days 4, 5 and 6), and for the second course of the drug (days 7, 8 and 9). Mean values for these three periods are shown separately for antepartum and postpartum patients in Table 2. In both groups of patients a marked difference was noticed in sodium excretion, per twenty-four hours and per liter, between the first course of the drug and the rest period. The total amount of sodium excreted in urine was approximately four times greater during the first course of acetazolamide than during the resting interval, and the sodium concentration was three times greater in the first course. The difference between the mean of the first course and the mean of the rest period observed in both groups of patients, expressed either in mEq. per liter or mEq. per twenty-four hours, is statistically significant as evaluated by the "Student t" test ($P<0.001$).

Among the patients treated before parturition, the second course of the drug failed to elicit any increase in sodium excretion (mEq. per twenty-four hours or mEq. per liter) as compared with that of the rest period. The differences between these means are small and not statistically significant ($01<P<0.5$). In patients treated after delivery, the total sodium excretion and sodium concentrations were significantly increased during the second course of treatment as compared with the rest period, the probability of the differences being $P<0.001$.

When comparing the means of total sodium excretion (mEq. per twenty-four hours) of the first course of drug therapy with those of the second course (Table 2), we observed that the amount of this electrolyte excreted during the first course was four times as great in the antepartum group and twice as great in the postpartum group than the amount excreted during the second course of treatment (the difference between these means, $P<0.001$). The differences in excretion of sodium per liter between the two periods were not as great, but they were nevertheless statistically significant ($0.001<P<0.01$).

The amount of sodium excreted per twenty-four hours during the first course of acetazolamide was greater in the antepartum than in the postpartum group, while the converse prevailed during the second course. Similar changes were observed in the concentration of sodium excreted. Although these differences appear to be significant, statistical analysis showed that they could have occurred by chance.

When the values for daily sodium excretion during the first three days of drug therapy were considered, it became apparent that in both groups the greater natriuresis occurred during the first two days.

After final diagnosis of each patient's particular type of toxemia had been made, new mean values were determined for each of the types. Because of the small number of patients with each kind of toxemia, it was not considered fruitful to subject these to statistical analysis. The few degrees of freedom available would require extremely large differences in order to be statistically important.

When sodium excretion for each type of toxemia during the two courses of therapy was compared with that of the rest period, the changes observed were similar to those reported when the patients were grouped under the generic diagnosis of toxemia. The only exception was the group of postpartum patients with benign essential hypertension, in which minimal sodium diuresis was observed. Natriuresis increased during the second course of drug therapy.

The degree of natriuresis observed in antepartum patients during the first course of acetazolamide seemed to be proportionate to the severity of the disease. Patients with severe preeclampsia excreted the greatest amount of sodium; the mildly preeclamptic patients showed slightly less sodium diuresis, and those with benign essential hypertension with superimposed mild preeclampsia still less. Patients with edema only showed a lesser degree of natriuresis. It would thus seem that the degree of response paralleled the degree of electrolyte imbalance present.

3. *Urinary Potassium Excretion:* An increase in total potassium excretion (mEq. per twenty-four hours) was observed in both antepartum and postpartum patients during each course of acetazolamide. The daily mean values for the rest period and for each course of drug therapy are shown in Table 3. In both groups of patients, the differences between potassium excretion during the rest periods and the periods of drug administration were statistically significant ($P<0.001$). This reflected a kaliuretic response to acetazolamide. This increase in potassium excretion was greater during the second course of the drug in the postpartum group, in which the differences between the mean values of two courses was 19.5 mEq. per twenty-four hours ($P<0.001$). In the antepartum group, the difference between the two courses of drug treatment was small (2 mEq. per twenty-four hours) and not statistically significant ($P<0.5$).

In considering the potassium excretion per unit of urine volume (mEq. per liter), it was observed that there was no difference between the values in the first course of acetazolamide and those in the rest period. During the second course the excretion increased by 5.9 mEq. per liter in the antepartum group and 9 mEq. per liter in the postpartum group. These differences were statistically significant, the probabilities being $0.001<P<0.02$ and $P<0.001$, respectively. When the antepartum and the postpartum group were compared, no difference was detected in the excretion of potassium per units of volume (mEq. per liter).

The excretion of potassium per twenty-four hours was greater in the antepartum group during the first course (10 mEq.) and greater in the postpartum group during the second course (11.4 mEq.). The differences had no statistical significance ($0.1<P<0.05$). Estimation of the potassium excretion during each day of the first course of acetazolamide therapy revealed no change in excretion per unit of volume, while an appreciable increase in total excretion of potassium occurred during the second day.

Comparison of the daily mean values for potassium excretion for each type of toxemia revealed the following trends: in the antepartum and postpartum patients the degree of kaliuresis seemed to maintain an inverse proportion to the severity of the disease. This is in contradistinction to sodium excretion, which was directly proportionate to the severity of the toxemia. Patients with edema only had the greatest potassium excretion, patients with essential hypertension and mild preeclampsia had a somewhat lower potassium excretion, and those with severe preeclampsia excreted the smallest amount of urinary potassium in response to acetazolamide.

4. *Urinary Chloride Excretion:* Daily averages of urinary chloride excretions are shown in Table 4. Here again, measurements were made separately for the antepartum and postpartum patients, and the determinations were made for each day of the first course of acetazolamide, for the rest period and for the second course of the drug.

Antepartum Group: The amount of chloride excreted daily during the first course of drug therapy was twice the amount excreted during the rest period and three times the amount excreted during the second course. Chloride concentration rose in a similar manner (for the differences between these means, $P<0.001$). The excretion of chloride per twenty-four hours and per liter during the second course of acetazolamide was less than that of the rest period ($0.001<P<0.01$).

Postpartum Group: In this group, too, the excretion of chloride per twenty-four hours and per liter was greater during the first course of the drug than it was for either the rest period or the second course of treatment. Among these patients, the excretion of chloride during the second course did not differ from that of the rest period. The probability that these differences occurred by chance is significant ($0.001<P<0.01$).

When the antepartum group was compared with the postpartum group, the chloride excretion was greater in the antepartum group during the first course of the drug and in the postpartum group during the second course, but these differences could have occurred by chance, since the probability was greater than 1 in 10.

The mean values for daily chloride excretion, expressed as mEq. per twenty-four hours and as mEq. per liter for each day of the first course of acetazolamide, were evaluated. In both antepartum and postpartum patients the greater chloreusis occurred during the first two days.

Urinary chloride excretions were evaluated for each type of toxemia.

Chloride excretion, like sodium excretion, was proportionate to the severity of the electrolyte imbalance in antepartum patients. The highest values were observed in patients with severe preeclampsia, while patients with mild preeclampsia excreted somewhat less chloride. Those with benign essential hypertension with superimposed mild preeclampsia excreted

TABLE 2.—*Urinary Sodium Excretion: Daily Average*

		Sodium Excretion, mEq/24 Hr.						*Sodium Excretion mEq/1*					
		1st Course		*Rest*		*2d Course*		*1st Course*		*Rest*		*2d Course*	
Period of Treatment	*Number of Patients*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*
Antepartum	13	137.6	66	30.6	20	36	15	39.3	21.9	11.0	5.4	14.6	10.8
Postpartum	37	89.6	54.9	29.7	23.6	48.2	31.7	28.6	17.9	9.4	6.3	16.6	10.3

TABLE 3.—*Urinary Potassium Excretion: Daily Average*

		mEq/24 Hr.						*mEq/1*					
		1st Course		*Rest*		*2d Course*		*1st Course*		*Rest*		*2d Course*	
Period of Treatment	*Number of Patients*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*
Antepartum	13	68.3	21.8	46.4	13.7	70.3	21.8	20.5	8.8	18.4	7.8	24.3	11.2
Postpartum	37	58.3	19.5	47.5	17.2	77.8	34.5	21	8.3	17.0	7.1	26.0	11.5

TABLE 4.—*Urinary Chloride Excretion: Daily Average*

		mEq/24 Hr.						*mEq/1*					
		1st Course		*Rest*		*2d Course*		*1st Course*		*Rest*		*2d Course*	
Period of Treatment	*Number of Patients*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*	*Mean Value*	*Standard Deviation*
Antepartum	13	106.6	48.8	50.8	21.3	33	5.2	30.5	15.5	19.6	8.4	11	5.8
Postpartum	37	69	40.2	46	21	44	29.4	24	12.5	15.9	6.7	14.8	9.1

a still smaller amount, while patients with edema only excreted the smallest amounts.

In the postpartum group, the greatest chloruresis occurred in patients with transitory hypertension.

5. *Urinary Excretion of Ammonia; Titratable Acidity and Urinary p_H:* Urinary excretion of ammonia, titratable acidity and urinary p_H were determined in the cases of 5 patients of the antepartum group and 13 of the postpartum group. Daily averages were obtained separately for each group during each course of drug therapy and in the intervening rest period (Figs. 1 and 2). Ammonia excretion and titratable acidity decreased in both groups during the administration of acetazolamide and increased during the rest period. The decrease in ammonia excretion and titratable acidity during the second course was less marked in the antepartum patients. Inversely, the urinary p_H increased during drug administration and decreased during the rest period. In the antepartum group, the urinary p_H of the third day of the second course equaled that of the first day of the rest period. These changes are in agreement with the reports of other workers.[5]

6. *Serum Electrolytes:* For estimation of the changes in serum sodium, potassium, chloride, and carbon dioxide content produced by the administration of acetazolamide, blood was drawn daily from each patient during the entire period of study. Daily mean values for serum sodium, potassium and chloride concentrations were determined for each three-day course of therapy and for the rest period. To detect further changes in the serum, potassium and chloride balances brought about by the two courses of drug administration and the rest period as well, serum electrolyte concentrations were compared for each patient on the first morning before acetazolamide was begun, on the first and last days of the rest period and on the first day following the second course of treatment. Mean values for the individual differences were determined separately for the antepartum and the postpartum groups. The values obtained are shown in Figure 3, *above.*

The differences between the mean levels of serum sodium, potassium, and chloride concentrations in each period of study were minimal in both groups. Those of the changes that occurred in each period and the differences between them were too small to have any significance.

The serum carbon dioxide content of each patient was determined on admission, after each course of acetazolamide and after the rest period. Mean values for these determinations were obtained for the antepartum and postpartum groups (Fig. 3, *above*). The serum concentrations of carbon dioxide remained essentially unchanged. In the antepartum group the serum carbon dioxide decreased slightly after each course of acetazolamide. In the postpartum group a slight rise followed the first course of the drug.

Our study indicates that administration of acetazolamide to patients with toxemia of pregnancy, in the doses used by us, does not significantly alter the serum electrolyte concentrations.

COMMENT

The pharmacologic aspects of acetazolamide have been studied extensively in animals and in man, and appraisal of its clinical value in many diseases has been reported.[9]

It has been reported that the rapid development of unresponsiveness to repeated use of this agent, even when drug-free intervals are spaced between periods of administration, appears to limit its use.

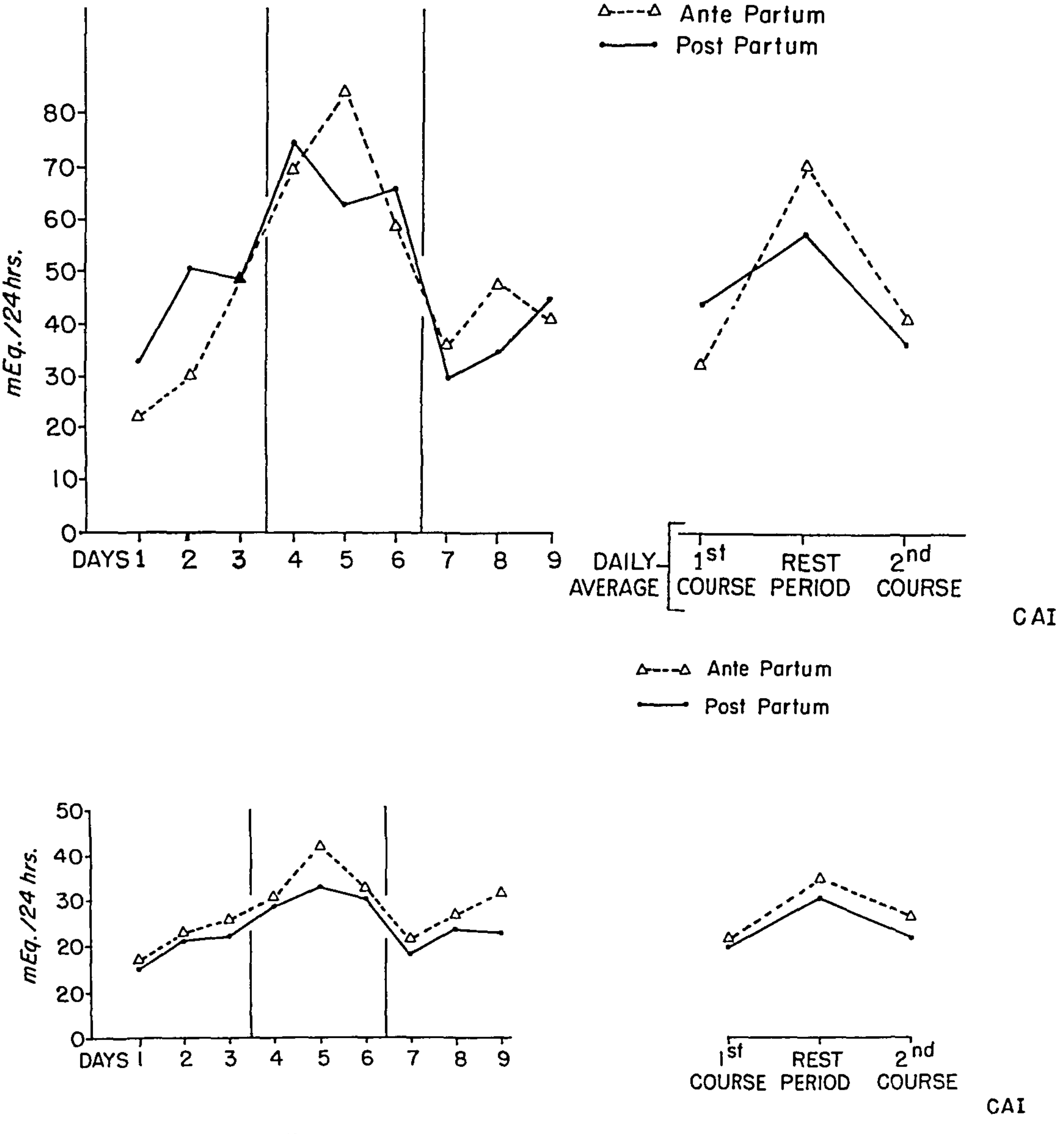

Fig. 1.—Charts showing daily averages of ammonia excretion (*above*) and titratable acidity of urine (*below*).

fulness as a diuretic.[10] This self-limiting action seems to be due to the production of hyperchloremic metabolic acidosis. We observed a certain decrease in the effectiveness of acetazolamide after repeated use of the drug. This was shown during the first course of therapy by a gradual decrease in natriuresis and urinary p_H and a gradual increase of ammonia excretion and titratable acidity. We observed that, contrary to our observations of antepartum patients, there was natriuretic response during the second course of the drug in postpartum patients. This difference was probably due to the increased serum bicarbonate level observed in puerperal patients as a result of the disappearance of the compensated physiologic alkalosis of pregnancy. The changes observed in serum electrolytes were minimal, and neither acidosis nor hyperchloremia was present. The lack of response to acetazolamide was observed as the water and electrolyte imbalances were corrected.

No rebound phenomena followed the use of acetazolamide. The sodium balance, as measured by the sodium intake and urinary sodium output, remained normal during each course of therapy and during the rest period (Fig. 3, *below*).

The excretion of potassium was increased during both courses of acetazolamide administration, but more markedly so during the second course in postpartum patients. This is probably due to the increased endogenous production of potassium during the puerperium, which results in a greater concentration of potassium in the glomerular filtrate. The kaliuretic response was greater during the second course of the drug, when the water and electrolyte imbalance had been corrected; this suggests that hypokalemia could conceivably result from prolonged administration of the drug to patients who did not have excess salt.

It has been shown by other authors that the effect of carbonic anhydrase inhibition upon chloride excretion is variable, increasing or decreasing it slightly or leaving it unchanged. We observed a considerable chloruretic response to acetazolamide during the first three days of therapy in both antepartum and postpartum patients. During the second course of acetazolamide, the chloride excretion decreased in antepartum patients and remained unchanged in those treated during the puerperium.

Increase of water excretion was noted only in antepartum patients, during the first course of the drug, the water diuresis occurring on the second and third days. The electrolyte excretion (total amount excreted) per twenty-four hours and per liter was increased, and was also greater during the first and second days.

The diuretic response was smaller than

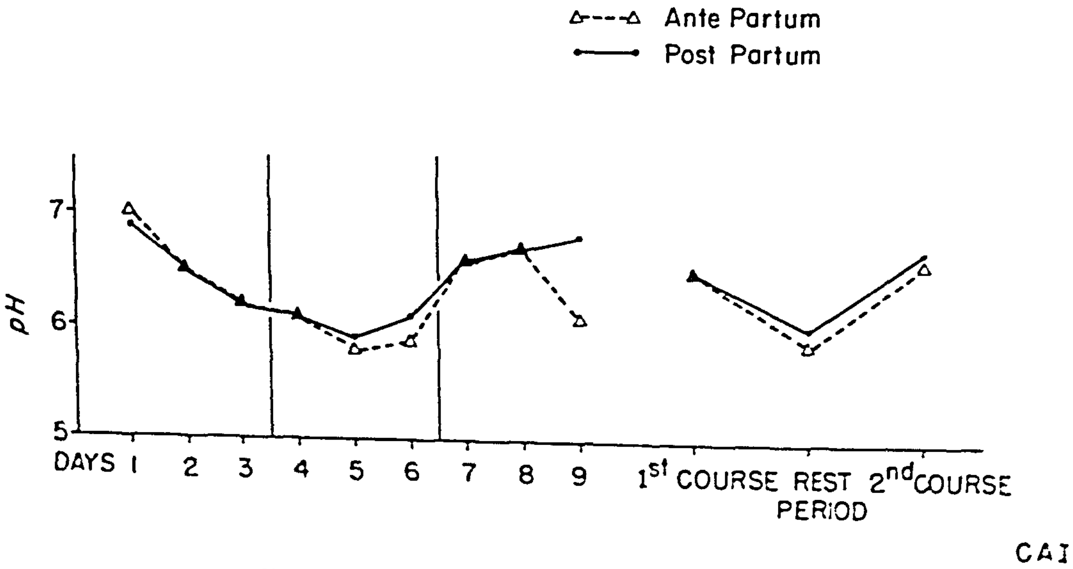

Fig. 2.—Chart showing daily average pH of urine.

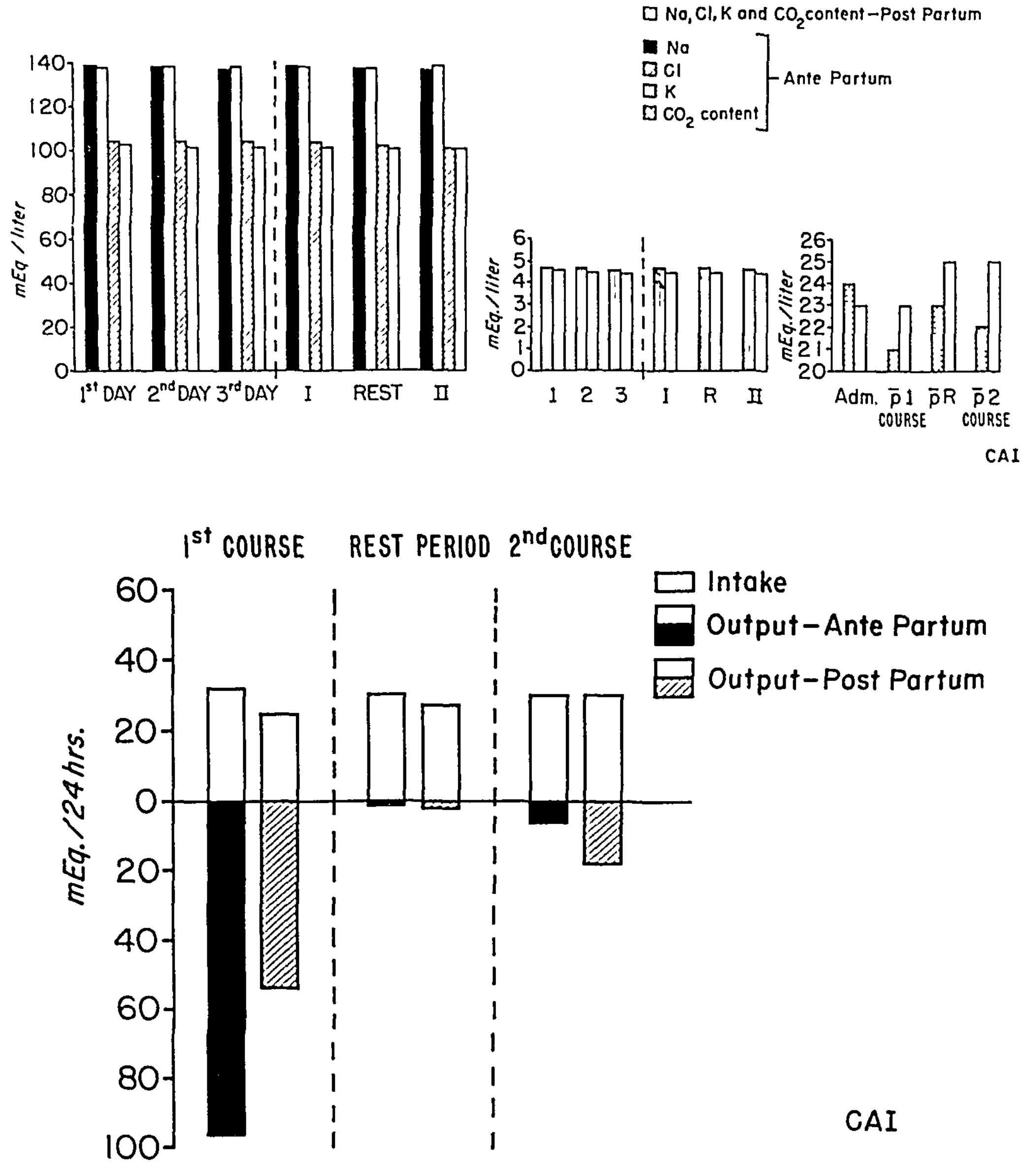

Fig. 3.—Charts showing observations on serum electrolytes (*above*) and sodium balance (*below*).

the lyuretic. We agree with the concept that acetazolamide has a primary effect on the renal excretion of electrolytes but not on the renal excretion of water. Water was excreted as an indirect result of increased electrolyte loss and served to maintain stable osmolarity.

The effect of acetazolamide is dependent to a certain degree upon the concentration of sodium bicarbonate in the glomerular filtrate. Govan has shown that relative metabolic acidosis is present in patients with preeclampsia as a result of increase in phosphates and organic acids, possibly from disturbed carbohydrate metabolism. A slight decrease of serum bicarbonate accompanying the well-known reduced glomerular filtration rate of patients with preeclampsia will result in decreased concentration of sodium bicarbonate in the glomerular filtrate. One would expect, therefore, a poor response to acetazolamide in preeclamptic patients. In this study this was not substantiated, since the best response was observed in such patients and seemed to parallel the presence of excessive extracellular fluid volume and the severity of preeclampsia.

In evaluating the toxic and side effects of acetazolamide, one must know the distribution and role of carbonic anhydrase. an enzyme present in various organs and tissue fluids. The erythrocytes have the highest concentration of carbonic anhydrase of all the tissues in the body. In fetal blood the concentration is much lower. In adults acetazolamide does not significantly alter the erythrocyte concentration of active carbonic anhydrase, but no similar studies have been carried out with newborn infants. In certain doses, acetazolamide administered to dogs[11] and man[12] may interfere with the release of carbon dioxide from the pulmonary capillary blood to the alveoli. This fact is insignificant if the drug is used in therapeutic dosages, but in the human being it does raise the question of possible interference with respiratory exchange between mother and fetus, since the concentration of carbonic anhydrase in fetal blood is much lower.

Even though the role of encephalic carbonic anhydrase is not well known, it is reasonable to wonder whether its inhibition in infants may not produce noxious effects upon the higher centers of the fetus *in utero.* Acute and chronic toxic states caused by the inhibiting action of acetazolamide on carbonic anhydrase have been studied in dogs and rats. and. to a certain extent. in monkeys and in man.[13] Of the various signs of toxicity which have been reported in connection with the drug, the more common ones are drowsiness, paresthesias, and numbness or tingling in the face or the extremities.[14] Drug fever and agranulocytosis have been encountered only rarely.[15] In my patients no side reactions of any sort were noticed, nor were any toxic effects observed in babies, either at birth or during breast feeding, when their mothers had been given acetazolamide.

Summary of Results.—In both the antepartum and postpartum groups of patients with toxemia of pregnancy, a remarkable increase in natriuresis and a smaller increase in chloruresis and kaliuresis was observed during the first course of acetazolamide.

In the antepartum group, the second course of the drug failed to alter the excretion of sodium. The excretion of chloride was decreased, but the potassium excretion was increased. The concentrations of sodium and chloride were increased. while there was no significant change in the concentration of the potassium excreted. In the postpartum group, no change was encountered in chloride excretion, but there was a significant increase in total excretion of sodium and potassium and in the concentration of these ions during the second course of treatment.

In both groups of patients, ammonia excretion, titratable acidity and urinary p_H changed during periods of drug therapy. as has been reported by other workers.

The serum concentrations of sodium. potassium. chloride carbon dioxide remained essentially unchanged during the ten days of study.

In neither group of patients was the excretion of water significantly altered by the administration of acetazolamide.

SCHLUSSFOLGERUNGEN

1. Die Verabreichung von Acetazolanid, einem kohlensauren Anhydrasehemmungsstoff, erhöht die Wasserstoffionenkonzentration des Harns und die Ausscheidung von Natrium, Chlorid and Kalium aus der Blase. Es führt zu einer Harabsetzung der Ammoniakausscheidung und des titrierbaren Säuregehalts bei toxämischen Kranken mit einem Übermass an extrazellulärem Flüssigkeitsvolumen.

2. Acetazolanid ist ein wirksames Mittel zur Anregung der Natriumausscheidung bei toxämischen Schwangeren oder Wöchnerinnen.

3. Bei Kranken, bei denen das gestörte Gleichgewicht des Wasser- und Elektrolytenhaushalts korrigiert worden ist, ruft die Verabreichung einer täglichen Dosis von 250 mg des Mittels nur einen minimalen Einfluss auf die Ausscheidung von Natrium und Wasser hervor; es besteht die Möglichkeit, dass die fortgesetzte Anwendung des Mittels bei toxämischen Kranken, die keine klinischen Zeichen eines übermässigen extrazellulären Flüssigkeitsvolumens aufweisen, zu einem Mangel an Kalium im Blut führt.

4. Obgleich mit der im vorliegenden Studium angewandten Dosis keine offensichtlichen toxischen Wirkungen bei den Müttern oder den Säuglingen beobachtet wurden, erscheint es doch wünschenswert, nicht nur die Gesamtdosis des verabreichten Acetazolanids sondern auch die Dauer der Anwendung des Mittels sorgfältig zu überwachen.

CONCLUSIONS

1. L'administration d'acétazolamide, une anhydrase carbonique inhibitrice, augmente le pH urinaire et l'excrétion de sodium, de chlorure et de potassium par la vessie. Elle diminue l'excrétion d'ammoniaque et l'acidité dosable chez les malades toxémiques présentant un excés de liquide extracellulaire.

2. L'acétazolamide est un agent natriurétique efficace chez les femme encientes et puerperale atteintes de toxémie.

3. L'administration quotidienne de 250 mg de ce produit aux malades dont le déséquilibre des liquides et des électrolytes a été corrigé, produit des effets natriurétiques et aquadiurétiques minimes. Il existe la possibilité que l'administration continue de ce médicament à des malades toxémiques ne présentant pas de signes cliniques d'un excès de liquide extracellulaire provoque de l'hypokalémie.

4. Malgré l'absence d'effets toxiques évidents chez les mères ou les nouveauxnés avec les doses utilisées pour cette étude, il semble indiqué de maintenir un contrôle vigilant non seulement sur la dose totale administrée mais aussi sur la durée du traitement.

CONCLUSIONI

1. La somministrazione di acetazolamide, aumenta il pH urinario e l'eliminazione di sodio, cloro e potassio; diminuisce l'eliminazione di ammonio e abbassa l'acidità titolabile nei malati tossiemici con un volume eccessivo di liquido extracellulare.

2. L'acetazolamide ha una spiccata efficacia sull'eliminazione del sodio nelle tossiemie gravidiche o nel puerperio.

3. La somministrazione giornaliera di 250 mg di questo farmaco a pazienti in cui lo sbilancio idroelettrolitico sia già stato corretto ha un effetto minimo sull'eliminazione del sodio e dell'acqua.

4. Benchè non si sia mai avuto alcun effetto spiacevole nè sulle gravide nè sui neonati, tuttavia anche alle dosi consigliate è opportuno sorvegliare attentamente il dosaggio e la durata di somministrazione del farmaco.

CONCLUSIONES

1. La administración de acetazolamida, un inhibidor de la anhidrasa carbónica, aumenta el pH de la orina y la excreción de cloro, sodio y potasio. Así mismo disminuye la excreción del amoníaco y la acidez intratable de los enfermos toxémicos con excesivo volumen líquido extracelular.

2. La acetazolamida es un evidente eliminador del sodio en la toxemia del embarazo y en puerperio.

3. La administración diaria de 250 mg. de este producto a enfermos cuyo balance de agua y electrolitos alterado ha sido corregido, produce un efecto mínimo sodiodiurético e hidrodiurético, lo que hace posible que la dosis continuada de la droga en enfermos toxémicos sin signos clínicos con excesivo líquido intracelular conduzca a la hipokalemia.

4. Aun cuando con las dosis citadas en este trabajo no se han producido efectos tóxicos en niños o madre, es conveniente mantener un control vigilante no solo sobre la dosis total sino a lo largo de todo el tiempo de administración.

CONCLUSOES

1. A administração de acetazolamide, um inhibidor de anhidrase carbonica, aumenta o Ph urinario e a excreção de sodio, cloretos e potassio. Faz decrescer a excreção da amonia e de acidosa dos pacientes toxemicos com volume extracelular excessivo.

2. A acetazolamide é um natriuretico eficiente para a toxemia gravidica ou puerperal.

3. A administração diaria de 250 mg quando o balanço eletrolitico é normal produz um efeito hidrico e sodicio minimo, levando, nos pacientes toxemicos sem sinais clinicos de volume liquido extracelular excessivo a uma hipocaliemia.

4. Emboram não tenham sido assinalados efeitos toxicos nas mães e filhos com a dosagem usada neste estudo, mostra-se desejavel manter a vigilancia sobre a dose total e duração do tratamento pela acetazolamide.

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In addition to sensitiveness to horses, some people are sensitive to cattle, to sheep. hogs. dogs, cats. rabbits, mice. chickens. ducks, and geese. Many individuals are known to be sensitive to chicken feathers and have attacks of asthma whenever they sleep on a feather pillow. Many patients long subject to asthmatic attacks have seen a complete disappearance of their symptoms when they abandoned the use of sleeping-pillows.

—*Major*

A New Type of Tendon Transplant Operation for Abducens Paralysis

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The basic elements of a successful tendon transplant for abducens paralysis are discussed, and a simplified procedure is described, which does not require splitting the tendons of the vertical recti. Two cases are reported, with preoperative and postoperative illustrations, showing that vertical muscle balance has been preserved.

THE operation for abducens paralysis has two main component problems that must be solved in order to obtain a good result. The main one consists of balancing the pull of the internal rectus muscle against that of the externus; the second, of strengthening the abducting power of the eye by transplantation of the superior and inferior recti in such a manner as to enhance their secondary function of abduction.

Spaeth[1] discussed in detail the futility of the tendon transplant operation when the paralyzed eye does not move spontaneously to the midline when both eyes are directed to the paralyzed side. If the paralyzed eye cannot do this, a preliminary recession of the internal rectus muscle is indicated, or it may even be necessary to do this at a subsequent operation. At any rate, he advised against doing a tendon transplant and a recession of the internal rectus simultaneously. Lateral rectus resection, however, is done at the same time.

Berens[2] usually combines both a resection of the lateral rectus and a recession of the internus with the tendon transplant unless there is a definite contraindication, such as a poor near point of convergence or a greater esotropia for far than at near vision. He believes that if a recession of the internus is possible, it will greatly enhance the end result.

Unless this main problem of lateral balance is solved in each individual case, the tendon transplant operation is doomed to failure. In my own opinion, the use of the forced duction test is of great help in arriving at a decision, and if at operation the eye rotates easily in both lateral directions the second step of the operation (tendon transplant) may be carried out.

Berens' modification of the original Hummelsheim operation (Fig. 1) is probably the most popular today. Figure 2 shows my own procedure, in which, instead of splitting the superior and inferior rectus tendons, all that is necessary is to transplant the intact tendons midway be-

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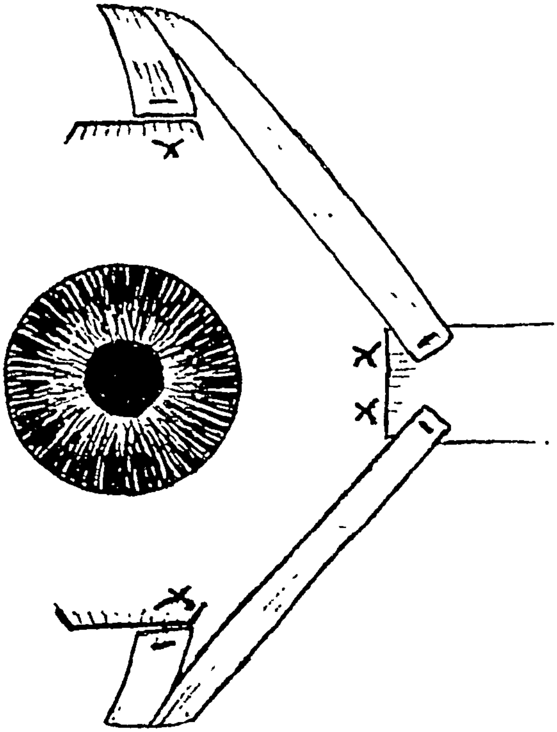


Fig. 1.—Berens' modification of the tendon transplant operation.

tween the lateral and vertical rectus muscle insertions. A double-armed No. 00000 chromic catgut suture is passed through the tendon in the following manner: First a central bite is taken and a square knot made, tying the central fibers; then each arm is threaded through the sides and a whipstitch taken at each border. The steps taken are depicted in Figure 3. This is the type of suture I use on the lateral recti also, for either recession or resection. The technic of transplanting the entire tendon offers the following advantages over splitting the tendons:

1. It is much more easily performed.
2. It is less hazardous, because the very thin halves of the tendon may conceivably tear during the operation.
3. It maintains the integrity of the tendons.
4. The secondary abduction function of the vertical recti is greatly enhanced.

When the idea of this modification first occurred to me, the possibility of disturbing vertical function had to be taken into consideration. Logical reasoning, however, can only conclude that, even if vertical muscles are split in two, the resultant pull will be exerted halfway between the two tendon slips. The real proof of this statement can be found only in actual operation, of course. This is a report of two such operations, in neither of which did vertical imbalance occur and in each of which the paralyzed eye could abduct and adduct 30 arc degrees postoperatively (total of 60 degrees).

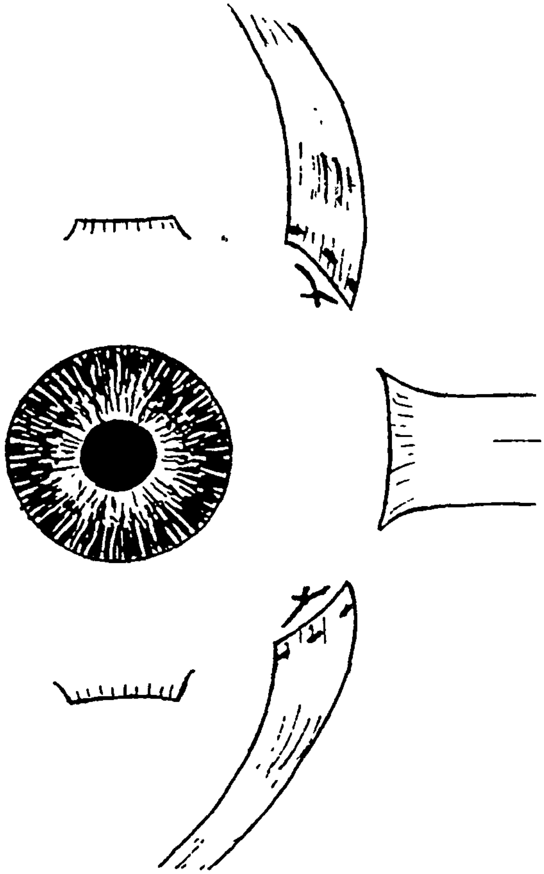


Fig. 2.—Author's modification, showing transplantation of the intact superior and inferior rectus tendons halfway between their points of insertion and that of the lateral rectus.

CASE 1.—A 9-year-old boy with complete congenital paralysis of abduction of the left eye had vision of 6/6 in each eye, with third-degree fusion. Since the eye moved to the midline spontaneously when looking to the left (Fig. 4 *A*, *B* and *C*), the internal rectus muscle was not recessed. The lateral rectus was left intact and the superior and inferior recti transplanted midway between their insertions as shown in Fig. 5, *A* - *H* inclusive. The forced duction test at the end of the operation showed difficult abduction. The result of this operation was disappointing, and six weeks later a 5 mm. recession of the internal rectus was performed, with a good final result. The affected eye can rotate in and out more than 30 arc degrees as measured on the perimeter. Vertical motion is not affected (Fig. 6, *A* - *E* inclusive).

CASE 2.—A 4-year-old girl had congenital abducens paralysis of the left eye. The eye moved to the midline spontaneously when looking to the left (Fig. 7, *A*, *B* and *C*). The vertical recti were transplanted in the manner aforedescribed. Forced duction revealed lack of lateral mobility of the eye; therefore, a 4 mm. recession of the internus was done, with a 4 mm. tuck of the lateral rectus muscle, all at the same sitting. The result is shown in Fig. 8, *A* - *E* inclusive. There is no vertical imbalance, and lateral motion is 30 arc degrees each way as measured on the perimeter (total of 60). The child's vision is 6/7 in both eyes, with second-degree fusion.

COMMENT

A review of the English literature shows that at least two other investigators hit upon the same idea before it occurred to me. Hildreth[3] mentioned it in 1953, with the report of a most interesting experiment. While operating on a young man for esotropia, with local anesthesia, he completely severed the internal and external recti from their insertions. No horizontal movement was now possible. The tendons of the vertical recti were then exposed, and a loop of silk thread was passed around them to approximate them (Fig. 9). The more the loop was tightened, the better could the patient abduct while on the operating table, showing that no training was required and displacement of the tendons

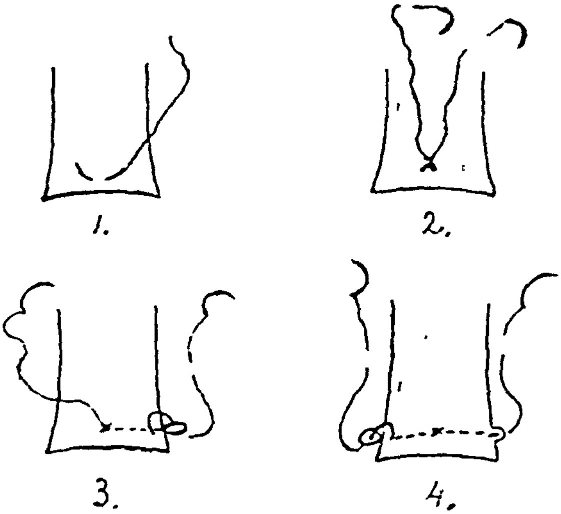


Fig. 3.—A double-armed No. 00000 chromic catgut suture is used. A central bite is first taken (*1*) and a square knot tied (*2*); then each arm is threaded through the sides and a whipstitch taken at each border (*3*, *4*).

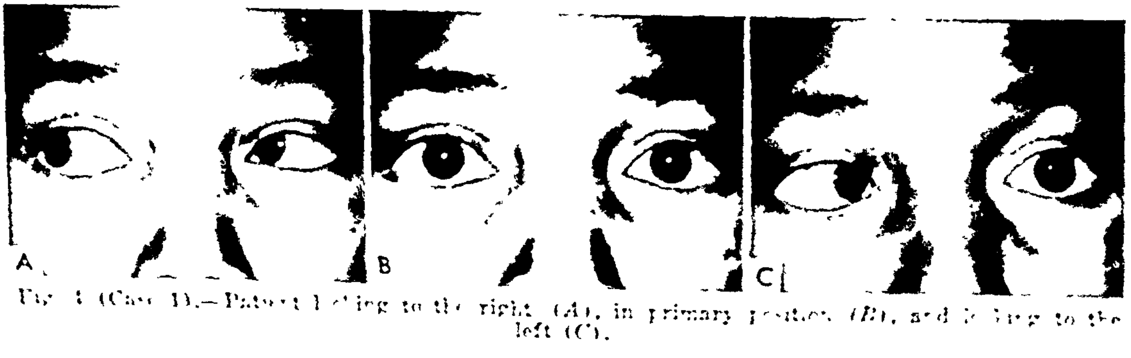


Fig. 4 (Case 1).—Patient looking to the right (*A*), in primary position (*B*), and looking to the left (*C*).

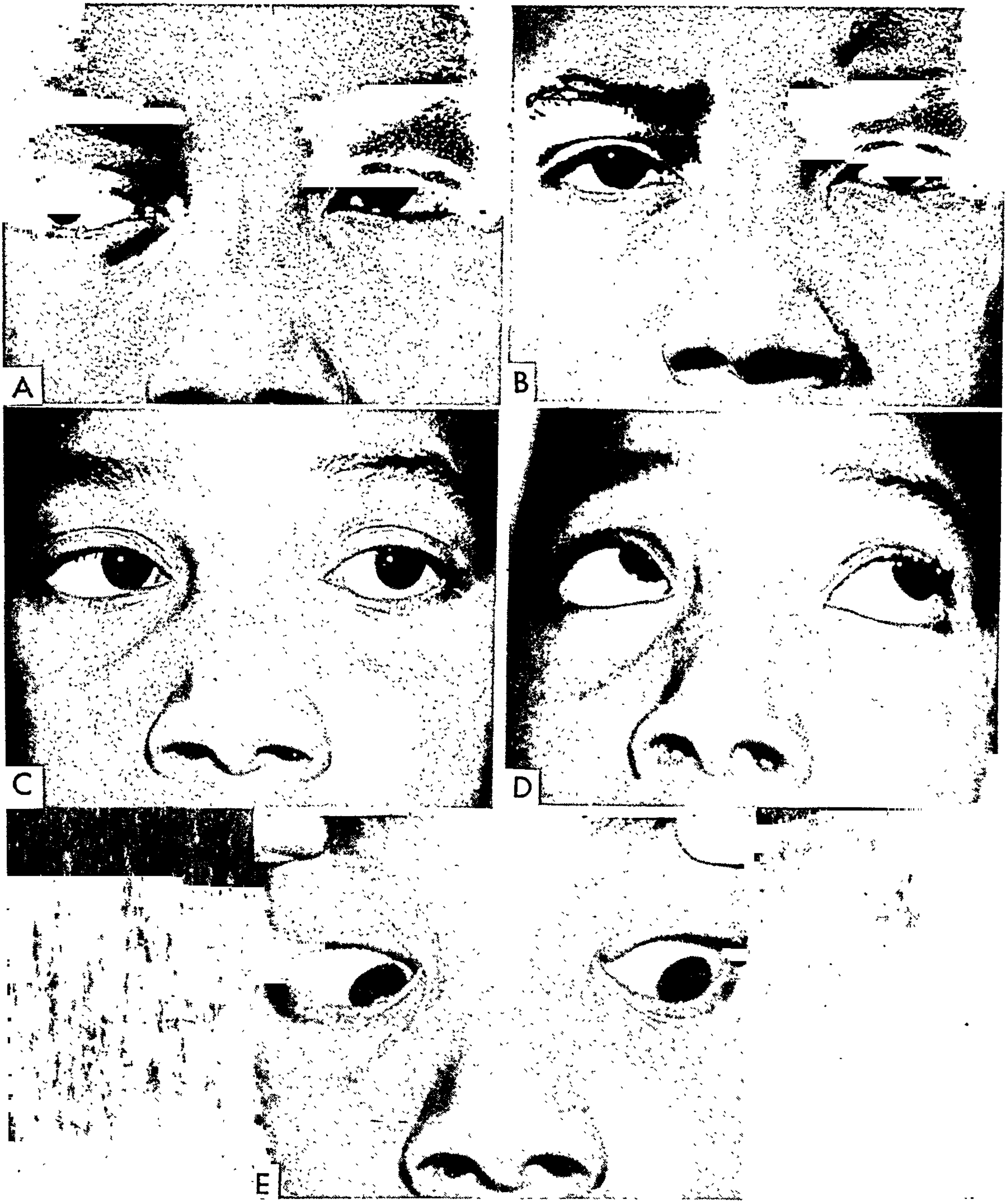
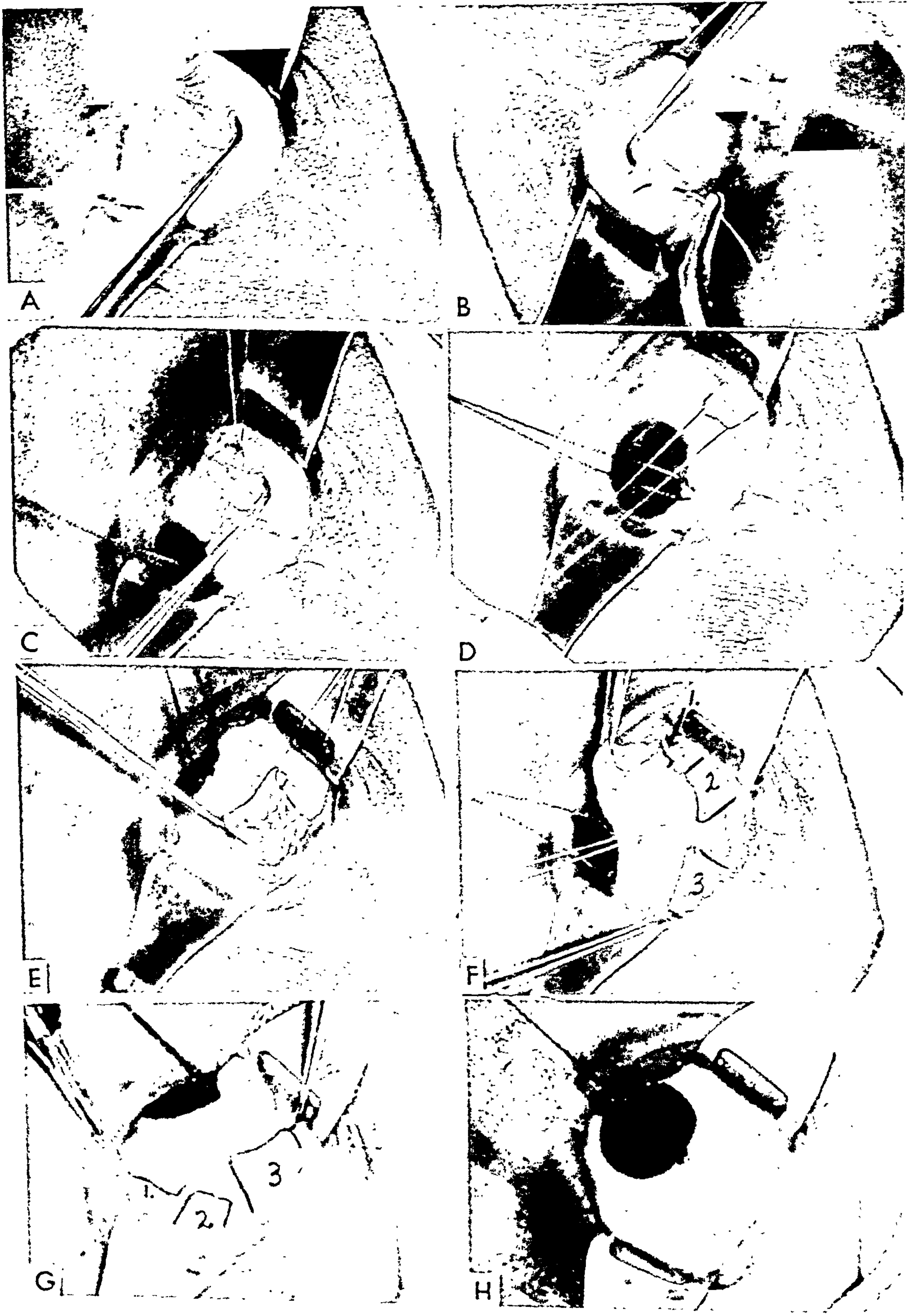


Fig. 6.—Postoperative appearance of patient in Case 1. Patient looking to right (*A*), in primary position (*B*), looking to left (*C*), looking up and down and to left (*D, E*), showing no impairment of vertical rectus action.

Fig. 5 (*opposite*).—Tendon transplant operation. Superior rectus isolated (*A*); bite taken in center of tendon (*B*); square knot tied (*C*); arms have been threaded through the sides and a whipstitch taken at each border, tendon cut free (*D*); lateral rectus demonstrated (*E*); needles having passed through sclera, tendon is now anchored (*F*) in new position (superior rectus stump, *1*; superior rectus tendon, *2*; lateral rectus, *3*). Same procedure has been done below (*G*). (Inferior rectus stump, *1*; inferior rectus tendon, *2*; lateral rectus, *3*); conjunctiva closed with No. 00000 plain catgut (*H*).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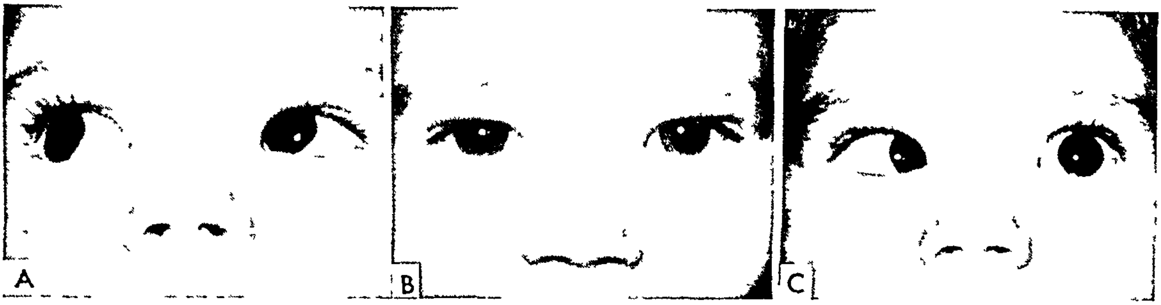

Fig. 7.—Preoperative appearance in Case 2. Patient looking to right (*A*), in primary position (*B*), and looking to left (*C*).

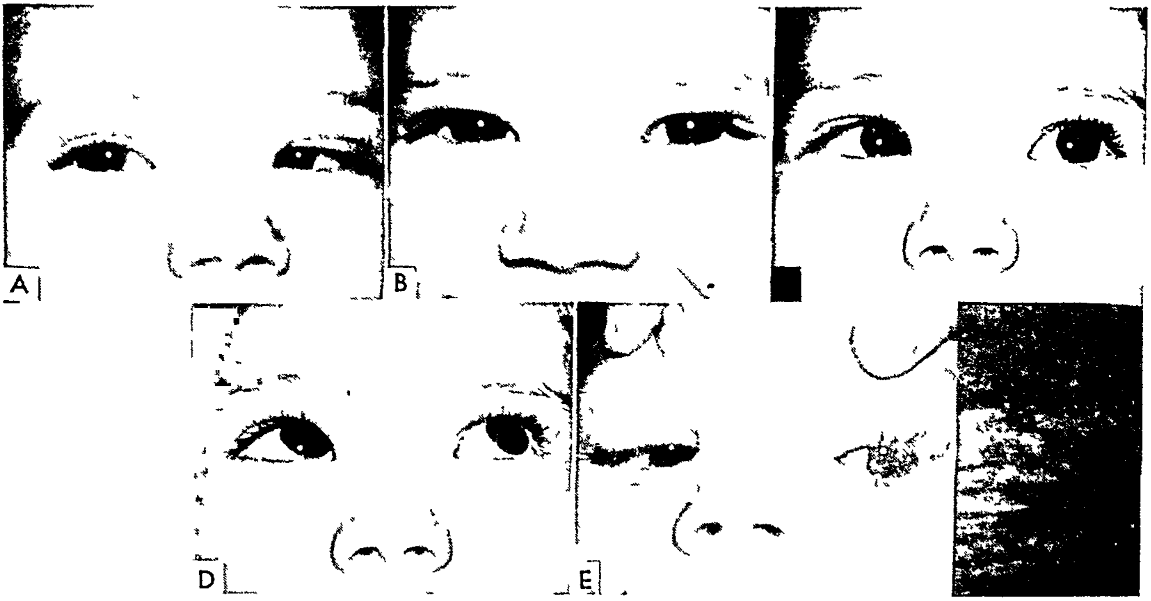

Fig. 8.—Postoperative appearance of patient in Case 2. Patient looking to right (*A*), in primary position (*B*), looking to left (*C*), and looking up and down and to left (*D*, *E*), showing no impairment of vertical rectus action.

laterally is all that is required. Hildreth then removed the suture and finished the operation for esotropia as planned. He did not pursue this idea any further, however, because of O'Connor's experiences.

O'Connor[4] actually performed the total tendon transplant operation for abducens paralysis in 6 cases. In none was the internus cut. The results were variable, and in the last case he obtained a "marked vertical deviation" that required another operation. He did not identify the type of hypertropia obtained, but it made him abandon the procedure in favor of transplanting the medial thirds. In my opinion there is a good possibility that this vertical deviation might have occurred no matter what type of transplant was used. It is not always possible to state preoperatively whether a patient has hypertropia or not, since the eyes cannot be examined in all cardinal directions of gaze. A latent vertical deviation can therefore easily become manifest once the patient can move the eye toward the paralyzed side. I am therefore convinced that the many advan-

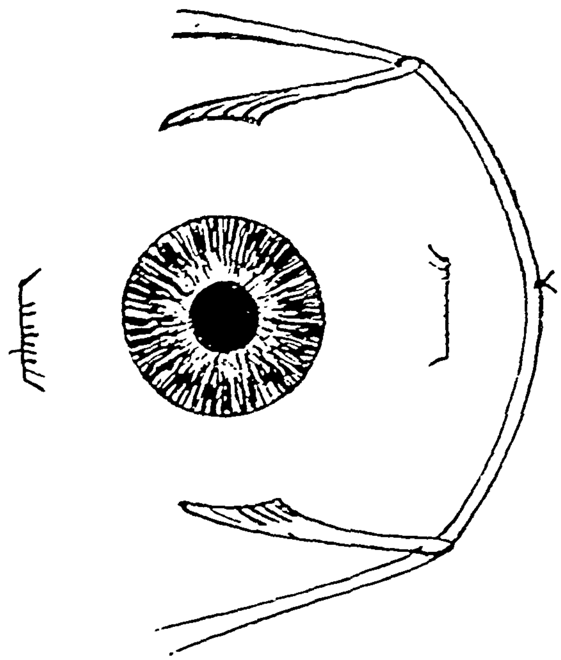

Fig. 9.—Hildreth's experiment. The lateral recti have been completely severed from their insertions and a temporary silk suture passed around vertical recti, approximating them over temporal side of globe. Patient could then abduct eye.

tages of this simplified procedure make it the operation of choice, especially since vertical action is not affected.

RESUMEN

Se trata en este trabao de los elementos básicos para el éxito del transplante tendinoso a la parálisis de la abducción que no requiere transfisión logitudinal de los elementos verticales del tendón. Se presentan dos casos, incluyendo el pre y el postoperatorio que muestran cómo se ha conservado la organización vertical.

RESUME

Les éléments de base d'une bonne transplantation de tendon en cas de paralysie des abducteurs sont discutés, et un procédé simplifié est décrit, qui n'exige pas la division des tendons des grands droits. Deux cas sont rapportés avec illustrations montrant l'état pré- et post-opératoire; l'équilibre musculaire a été conservé dans la verticale.

SUMARIO

Säo discutidos pelo A. os elementos basicos dos enxertos tendinosos para paralisia do abductor que descreve um metodo simplificado. Apresenta dois casos com ilustrações pre e pos operatorias mostrando que o equilibrio muscular pode ser preservado.

ZUSAMMENFASSUNG

Die grundlegenden Voraussetzungen für eine erfolgreiche Transplantation der Sehnen bei Fällen von Lähmung des N. abducens werden erörtert. Es wird ein vereinfachtes Verfahren beschrieben, das keine Spaltung der Sehnen der vertikalen Rektusmuskeln erfordert. An Hand von Illustrationen vor und nach der Operation wird über zwei Fälle berichtet, die zeigen, dass die Balance der vertikalen Muskeln erhalten blieb.

RIASSUNTO

Vengono discussi gli elementi necessari quando si voglia esequire con successo il trapianto tendineo per la paralisi dell'abducente e viene descritta una tecnica semplificata che non comporta la sezione del tendine del muscolo retto. Vengono riportati due casi.

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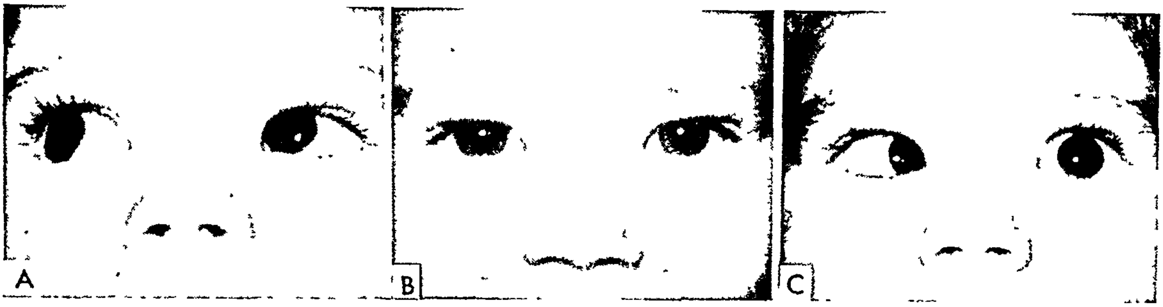

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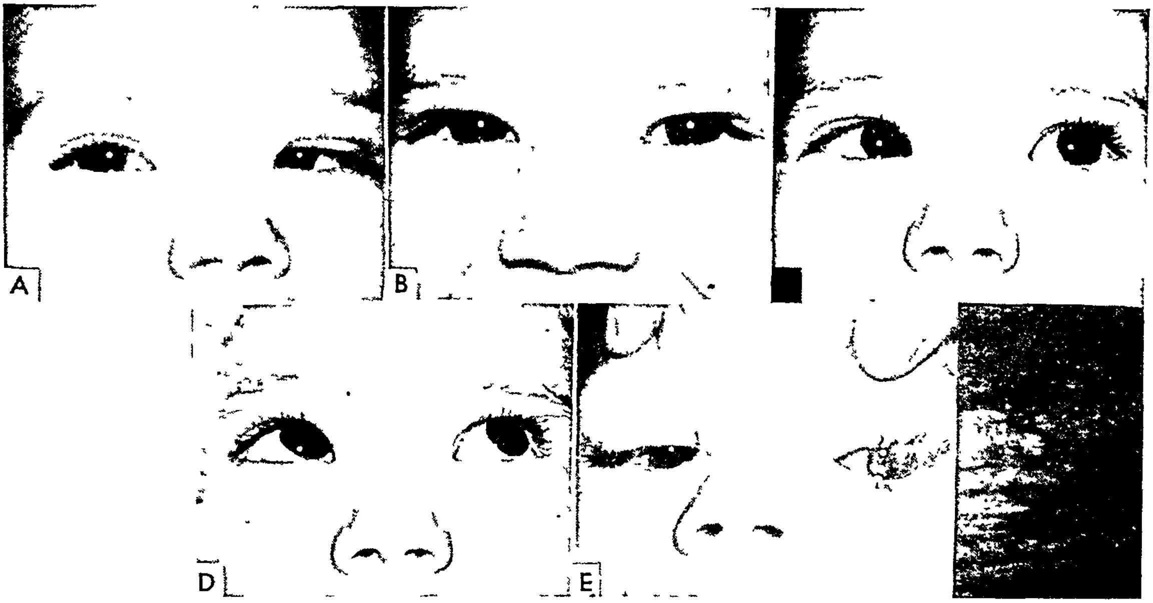

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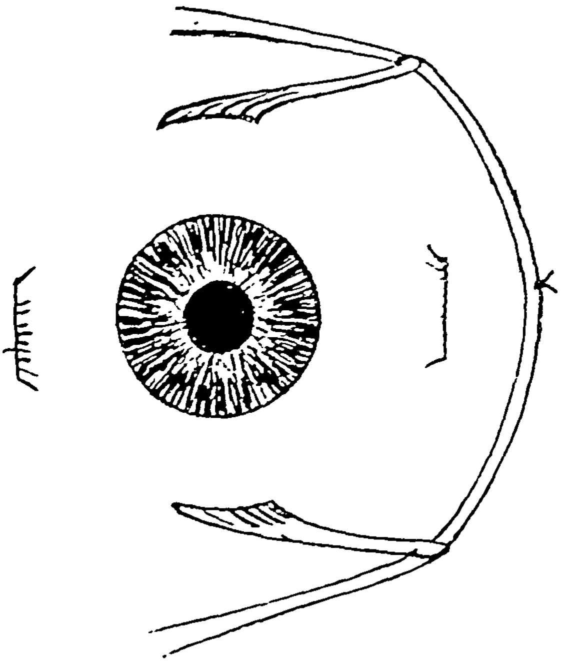

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Editorial

Reflections on the Conquest of Pain, Infection and Hemorrhage

EUGENE M. K. GEILING, M.D., F.I.C.S.
CHICAGO, ILLINOIS

EVER since man's advent on earth three great evils have plagued him: pain, infection and hemorrhage. These same terrors embittered the healing art and impeded its progress for many centuries. Then in a relatively short space of time, the quarter century from about 1846 to 1873, a new era dawned. In this brief span the three evils aforementioned were suddenly robbed of most of their terror. Probably more was accomplished in this short period to place surgery on a truly scientific basis than in all the centuries that preceded this wondrous period (Halsted).

Introduction of Anesthesia.—Pain presented what seemed an insoluble problem to the surgeon, even though such substances as alcohol, mandragora, and opiates as well as physical methods, had been known and used for centuries. The best surgeons of the day were those who worked rapidly. For example, an efficient surgeon, before the discovery of anesthesia, could hack off a limb in thirty seconds. The seemingly insurmountable problem of pain was largely resolved with dramatic suddenness in 1846, with the introduction of ether as an effective general anesthetic.

Surgery was thus largely freed from one of its three great evils. The story of this discovery has been told factually as well as dramatically in many places. A few additional comments seem warranted, however, to link antisepsis, asepsis and anesthesia with surgical development.

The immediate benefits to humanity of

During the forthcoming months of 1959 and as long thereafter as possible, the editorial pages of the Journal of the International College of Surgeons *will be occupied by presentations of rare and extraordinary historic value, the lectures presented at the International Surgeons' Hall of Fame on medical and surgical history from the earliest recorded achievements to those of our own times. We believe that* Journal *readers who were not able to attend the lectures will find them as exciting as did the audiences present at their delivery. The story of progress in the healing arts and the giants of medicine and surgery to whom we owe the amazing brilliance and scope of modern achievement is intrinsically thrilling and is a vital part of the education of every cultivated man and woman, inside or outside the profession. It is altogether fitting that it should appear in these pages, since the International College of Surgeons is first, last and always a teaching institution.*

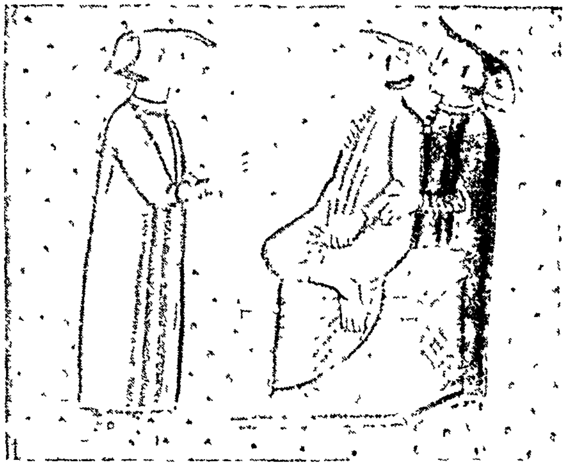


Fig. 1.—Theodoric de Lucca (thirteenth century). From fourteenth century manuscript in the library of the University of Leiden. Picture from *The Surgery* of Theodoric-Eldridge Campbell and James Colton, Appleton-Century-Crofts, Inc., 1955.

the discovery of anesthesia and its great influence upon medical science have never been questioned. William H. Welch refers to this discovery as "the happiest gift ever conferred upon mankind by medical science"; Weir Mitchell calls it "the death of pain."

A fact not generally recognized is that the first actual use of ether to produce deep anesthesia in human subjects was a daring, as well as a risky, procedure performed by surgeons and dentists who had little or no training in experimental methods, even though animal experimentation was already well recognized in physiologic research.

Ether anesthesia was widely employed immediately after the public demonstration of its efficacy by Morton in 1846. It is regrettable that the principals, Morton, Wells and Jackson, were not actuated by idealistic motives in furthering the proper use of ether; they were concerned much more with personal gain. Their ultimate tragic fate is now a well-known fact of history.

Chloroform, too, was widely used in the British Isles soon after Simpson's initial use of it in 1847. The improper use of both these agents caused a number of deaths. Much credit, however, belongs to John Snow of London, a prominent physician who recognized early the great value of these new agents, and stated that deaths caused by these drugs were due to their improper use. Through experimentation he devised suitable inhalers, described the different stages of anesthesia and showed that the depth of anesthesia paralleled the concentration of the anesthetic in the blood. Snow's work pointed the way toward a more rational use of chloroform and ether, eventuating in a marked reduction in the death rate associated with these agents.

Another important fact that needs special emphasis is that the introduction of ether and of chloroform was not quite the perfect boon to mankind that had generally been supposed. It is true that their use (a) spared the patient much suffering, (b) enabled the surgeon to work more slowly with less tension, and (c) thereby facilitated the control of hemorrhage.

Although these new anesthetics did make possible many more operations, the surgeon still had to operate with the terror of infection constantly plaguing him. The postoperative mortality rate actually increased; and this state of affairs caused great concern to many surgeons, who still operated in unhygienic rooms with unclean instruments and dressed in street coats often spattered with the blood and pus of previous operations. "Sepsis was almost inevitable, and the mortality from erysipelas, septicemia, and hospital gangrene rose in many cases to 90%. Pus that localized was 'laudable' pus, and was (generally) deemed essential for healing. Healing by 'first intention' was rarely observed. Because there was lacking a knowledge of the cause of secondary infection and of effective methods of preventing it, the surgeon of that era predicted that the abdomen, the brain, and the chest are forever shut from the intrusions of the surgeon."

Introduction of Antisepsis.—Early History: As early as the thirteenth and fourteenth centuries there were a few surgeons who were convinced that "laudable pus" was not necessary for wound healing. In the thirteenth and early fourteenth centuries at least three surgeons—Hugo de Lucca (circa 1160-1257), his son and follower, Theodoric (1205-1298) and Henry de Mondeville (1260-1320), the pupil of Theodoric, refuted the "laudable pus" idea.

The views of Theodoric de Lucca are especially significant. He is generally referred to as the forerunner of both modern anesthesia (soporific sponge) and antiseptic surgery. He insisted that suppuration or pus formation in wounds was unnecessary and undesirable. "It is not necessary," he said, "that pus should be generated in wounds. No error can be greater than this. Such a practice is indeed to hinder nature, to prolong the disease, and to prevent the conglutination and consolidation of the wound" (Book II, ch. 27). Sir Clifford Allbutt points out that this simple, direct statement makes Theodoric one of the most original surgeons of all time, for only Mondeville (his pupil) and Paracelsus upheld these principles before Lord Lister and von Bergmann. In the long interregnum "The advocates of suppuration won all along the line." Theodoric urged cleanliness and the use of alcohol or wine to cleanse the wound. He rejected Galen's pastes and salves, the application of which was the generally accepted method of treating wounds. He was convinced that healing by first intent could be accomplished through cleanliness and approximation of the edges of the wound. Theodoric's ideas were not accepted, and he was subjected to very severe criticism by most of the physicians of his time. Even Guy de Chauliac, the most eminent surgeon of the fourteenth century, attacked

Fig. 3.—Joseph Lister, taken about the time he developed his antiseptic surgical technic (1865).

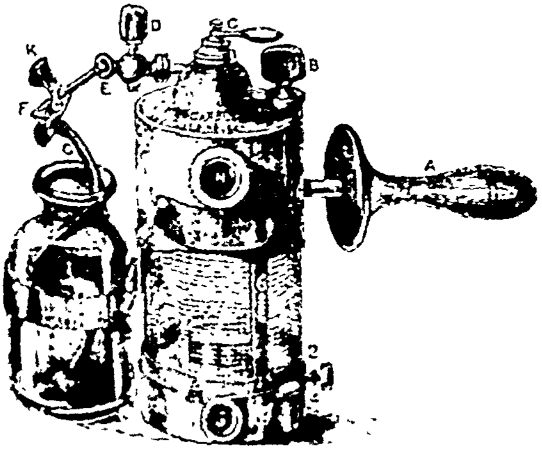


Fig. 2.—Steam spray used by Lister (use abandoned in 1887).

his views on wound healing and referred to him as a copyist and a plagiarist.

Another kindred spirit who emphasized cleanliness was a sixteenth century barber surgeon and the greatest surgeon of the Renaissance, Ambroise Paré. He emphasized the healing power of nature and rejected the use of boiling oil, substituting turpentine as a cleansing agent. He did, however, subscribe to the necessity of pus formation in wound healing.

Toward the end of the eighteenth century the infectious nature of childbed fever was beginning to be recognized, especially in Britain, by such men as William Smellie, William Hunter, John Leake, Alexander Gordon (of Aberdeen) and notably Charles White, of Manchester, who in 1773 wrote "A Treatise on the Management of Pregnant and Lying-In Women." In this paper he advocated the use of emollient and antiseptic injections into the uterine cavity in cases where the lochia had become fetid. He insisted upon strict cleanliness and adequate ventilation.

In the field of obstetrics also, Ignaz Semmelweis (1818-1865) and Oliver Wendell Holmes (1809-1894) stressed the importance of cleanliness in reducing mortality due to childbed fever. Oliver Wendell Holmes, perhaps best known for his *Medical Essays* (Baton, 1888) and as a man of letters, in 1843 wrote a very provocative essay, "The Contagiousness of Puerperal Fever." In this medical classic, which he read before the Boston Society of Medical Improvement, he pointed out that this disease was frequently carried by the doctor

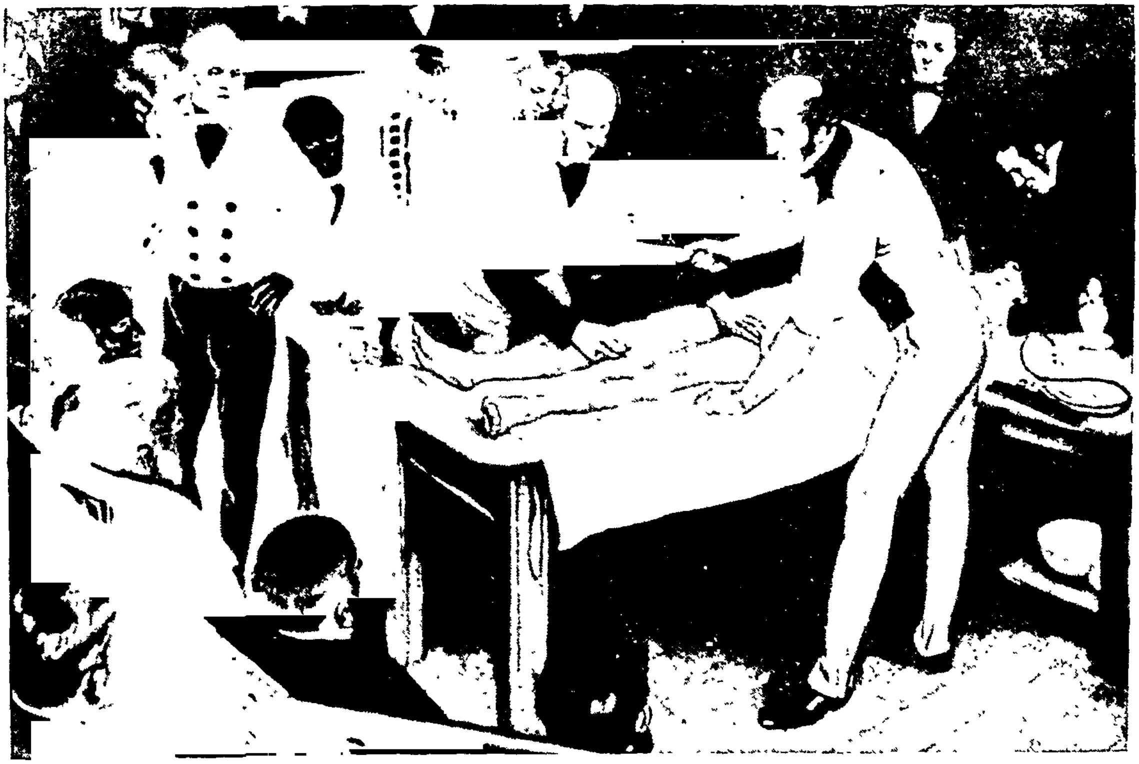


Fig. 4.—Robert Liston performing the first operation with ether anesthesia in Britain at University College Hospital, London, in December 1846. Joseph Lister (leaning forward, upper left) was a spectator on this occasion. (From: Lord Lister. By: Douglas Guthrie.)

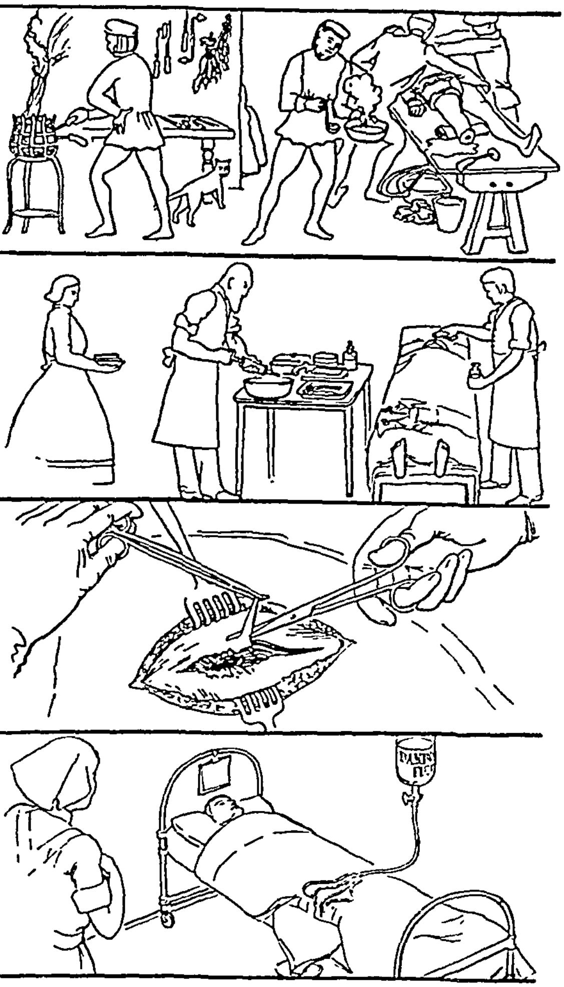
from one patient to another, or from a patient with erysipelas to a mother recently delivered of a child. Holmes regarded the dissecting room as a source of infection; he advised washing the hands in chloride of lime and changing clothes before attending a confinement. Needless to say, his views were vigorously attacked by the leading obstetricians of the day. Holmes's essay was published four years before Semmelweis's contribution to the problem. Holmes, however, did little to implement his views. Semmelweis, on the other hand, forbade students and physicians to enter obstetrical wards directly from the dissecting room or from an autopsy. He required them to wash their hands thoroughly in a solution of chloride of lime. After this innovation was introduced the mortality rate dropped from 18 per cent to 1 per cent; nevertheless, his views were so vigorously attacked by his colleagues that he was forced to resign. He had a severe nervous breakdown and died in a mental hospital at the early age of 46.

Pasteur and Lister: From the foregoing brief review, it is apparent that there were partially successful, even though empirical, attempts to lower the mortality rate associated with childbed fever and surgical infections by cleanliness and the use of disinfectants. What surgery has become today it owes in large measure to the experimental work of Louis Pasteur and Joseph Lister, who were instrumental in "smashing the spectre of infection as it haunted the surgeon." Their contributions were so revolutionary that many historians have divided the entire history of surgery into two epochs—before and after Lister.

Joseph Baron Lister (1827-1912), one of the greatest figures in medical history, was not only a skillful surgeon but a seasoned investigator. While a medical student in the University of London he did several highly creditable pieces of research, and published four research papers shortly after receiving his degree in medicine. After graduation he went to Edinburgh and served under Syme, the leading British surgeon of his day. Then he was called to the Chair of Surgery in the University of Glasgow (1860), and it was here that he began his epoch-making researches which led to the development of the technics of antiseptic surgery.

Lister was distressed at the prevalence of hospital gangrene and the high mortality rate following surgical procedures that were technically correct. He also noted that open wounds, notably compound fractures, were much more liable to infection than injuries and simple fractures in which the skin remained intact. He sought every available means of reducing this high mortality in his surgical wards. In spite of extreme cleanliness and the use of a solution of potassium permanganate (Condy's fluid) and other deodorants, the incidence of infection and septicemia showed little improvement. He was convinced, however, that wounds need not secrete pus, and that healing could take place by "first intent." The question remained with him how to reduce infection and consequent death following operation. In his research work on inflammation, he was led to suspect that the cause of suppuration and infections of wounds was not the gases of the air, as was commonly believed, but something carried by the air. When he discussed this problem with Thomas Anderson, the professor of chemistry at the University of Glasgow, the latter called his attention to the work of Louis Pasteur. Lister immediately studied Pasteur's work and appreciated its significance.

Pasteur's researches, published before 1865, were the clues from which Lister developed his antiseptic surgery:



(1) Before aseptic surgery. — Amputations were often carried out and wounds were cauterised with instruments or with boiling oil to expel "poisons."

(2) Lister's antiseptic treatment. — Germs were removed from the surgeon's hands, instruments and dressings with carbolic acid and the wounds were irrigated and dressed with this antiseptic.

(3) World War I.— Wounds were now "surgically cleaned" by removal of all foreign bodies and dead tissues, and were left open to drain, every care being taken to prevent more bacteria entering from without.

(4) World War II.— In an attempt to rid septic wounds of germs, antiseptic solutions such as Dakin's were often passed continuously into the wound (irrigation).

Between the earliest recorded period and the early 19th Century little advance was made in the treatment of war wounds. Here we see some of the stages through which modern methods of treatment developed.

Fig. 5.—Some historical highlights in the treatment of war wounds. Taken From Molecules Against Microbes, by E. S. Duthie. London. Sigma Books Ltd., 1946.

"Putrefaction is a species of fermentation.

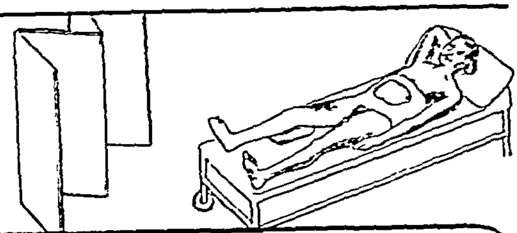
"It is caused by the growth of micro-organisms and does not occur independently of their presence.

"The micro-organisms that produce fermentation and putrefaction are carried by the air on the dust that floats in it. They also occur on and in solid and liquid substances.

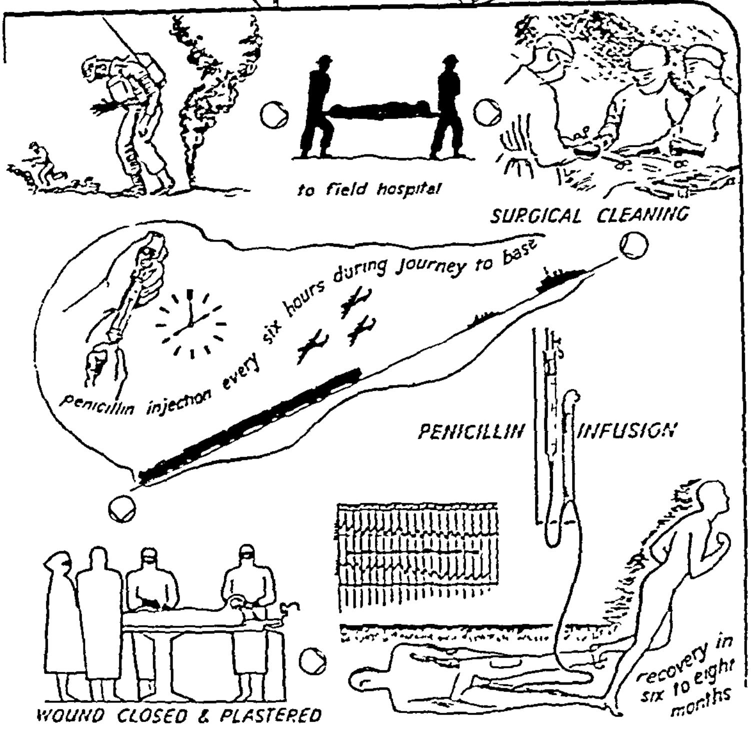
"These micro-organisms can be destroyed by heat and other agencies or separated from the air by filtration.

"Certain recognizable organisms produce definite and distinct fermentative processes.

"All of these organisms require oxygen. Some of them flourish only in the presence of free oxygen (aerobic), others only in its absence (anaerobic). The latter ac-



(5) Spanish Civil War—After "surgical cleaning" the limb was now encased completely in plaster so that no movement was possible. Infection remained localised in the wound and healing followed.



to field hospital
SURGICAL CLEANING
Penicillin injection every six hours during journey to base
PENICILLIN INFUSION
WOUND CLOSED & PLASTERED
recovery in six to eight months

(6) World War II, D-day.—After "surgical cleaning" (in an advanced post) the wound was encased in plaster and penicillin was given. Penicillin was continued during transit and the greater number of these wounds were closed successfully soon after arrival at a base hospital. Battle fractures of the type illustrated usually healed rapidly, and with little or no permanent disability.

Fig. 5.—Continued

quire their oxygen from the bodies which, by their growth, they are causing to ferment and putrefy.

"Many natural animal and vegetable products have no tendency to ferment or putrefy, even in the presence of oxygen, if collected with proper precautions and kept uncontaminated in sterilized vessels.

"Spontaneous generation has never been observed to occur and thus may be regarded as a chimera."

Pasteur's notable discoveries fired Lister to seek means of destroying the organisms. He reasoned correctly that if the microbes were the cause of suppuration, then means must be sought to destroy them, and if they were destroyed, healing of wounds by first intention could be obtained. He then sought effective agents, other than heat, to destroy them.

After experimenting with various chemicals he decided to use carbolic acid,

Fig. 6.—Louis Pasteur.

or phenol. This he employed not only on dressings and operative instruments but as a spray in an attempt to sterilize not only the operative field but the air in the operating room. Gradually he adopted milder antiseptics and steam sterilization for his instruments (introduced by von Bergmann) and dressings. He also abandoned the use of the spray in 1887. He insisted that everything that touched the wound must be clean and treated with the antiseptic.

His method, known as *antiseptic surgery*, immediately yielded gratifying results. Surprisingly, however, his colleagues were critical of his methods, and relatively few of them adopted the new procedures until much later. It was the Franco-Prussian War of 1870 that was responsible for the acceptance of Lister's method of treating wounds. The Army surgeons on both sides used Lister's technic with success, thus greatly reducing the mortality from battle wounds. Lister himself wrote an article entitled "A Method of Antiseptic Treatment Applicable to Wounded Soldiers in the Present War," which was published in the *British Medical Journal* in 1870. In this he described a simple method of dressing gunshot wounds with carbolic lotion and carbolized oil, with such dressing materials as were likely to be on hand in the ambulances of that day. He explained also how the essential objects of the treatment could be applied in the management of compound fractures.

Lister's methods, at first ridiculed, were progressively accepted, from the experimental domain to the atmosphere of the clinic. Lister was fortunate to witness during his lifetime the full acceptance of his great discovery and to end his days in worldwide acclaim. In accepting these honors, he always acknowledged publicly his intellectual debt to Pasteur.

The transition from antiseptic to aseptic surgical technics was in part a change from the purely chemical to the chemical and physical methods of sterilization. The initial antiseptic technic relied upon destruction of the bacteria by antiseptic solutions. It was soon recognized that the chemical agents used, while destructive to the bacteria, also injured the tissues.

The later aseptic surgical technic was developed after it was recognized that infections were caused by bacteria introduced into the wound (a) from the skin of the patient, (b) from the hands and clothes of the surgeon and his assistants, and (c) from instruments, dressings and sutures. To eliminate these potential sources of contamination the following procedures were necessary:

1. Increased care in the cleansing of the skin of the patient in the operative field.

2. Scrubbing of the hands of the surgeons and their assistants, and then immersion of the hands in antiseptic solutions.
3. Boiling of instruments and certain suture materials, and
4. Autoclaving the dressings, towels and sheets.

Von Bergmann and others played an important part in the development of these later technics.

The role of the tissues themselves in combating infections was becoming well recognized, and will be mentioned in more detail in the next section dealing with Halsted's contributions.

No discussion of antisepsis and asepsis would be adequate without referring to William Stewart Halsted (1852-1922), one of the truly great scientific American surgeons. Having spent two years abroad in the laboratories and clinics of such men as Billroth, von Bergmann, Thiersch, and others, Halsted returned to New York in 1889, fired with enthusiasm for the many new technics and ideas he had acquired. He was particularly well acquainted with the Listerian principles of antiseptic surgery and the later additions of asepsis. Unfortunately Halsted, too, found much opposition to Lister's work among his surgical colleagues in the United States. He battled this opposition vigorously by precept and by example. While he was on the staff of the Bellevue Hospital he found it impossible to carry out antiseptic precautions in its operating rooms, "where the numerous anti-Lister surgeons dominated and predominated." The hospital authorities refused to erect an operation building for his sole use, but they authorized the erection of a "tent" designed for his special needs at a cost of $10,000 (funds supplied by a friend): it served his purpose admirably, but Halsted used it only for a few months, after which he left New York.

Halsted's guiding principle was that in operating one should attempt to restore the tissues to their normal or physiologic condition. To achieve this end it was essential to operate with great respect for the integrity and nutrition of the tissues, to stop hemorrhage from the tiny severed blood vessels, "to bring together the separated tissues in their natural relations if possible, and to leave no vacant spaces where stagnant fluid might collect and form a fertile medium for the growth of bacteria." In some cases a blood clot was deliberately allowed to fill an unavoidable space. Halsted's procedures combined the antiseptic technic of Lister and the aseptic technic of von Bergmann, Schimmelbusch and others with the necessity of maintaining the defensive power of the tissues by preserving their blood supply and protecting them from injury. Halsted demonstrated that bacteria could be introduced into the peritoneal cavity of a dog without ill effects, provided there was no mechanical injury to the tissues. If some small portion of the peritoneal tissue was bruised or deprived of its blood supply, then only a very small inoculum would rapidly produce fatal peritonitis. This simple experiment proved that the tissues possess a powerful defensive mechanism against bacteria if they are not injured.

Halsted's Experiments with Cocaine.—In 1884, Koller announced that cocaine would produce anesthesia when applied topically to the conjunctiva and to the cornea. Halsted sensed the importance of Koller's observation, and promptly began a series of experiments with cocaine by injecting the drug into himself, and his two associates. The results of these daring experiments led to what is regarded by many as the most brilliant of Halsted's many discoveries; namely, that cocaine injected into the trunk of a sensory nerve would render insensible the area supplied by the branches of this nerve. He found that the effects of the drug last longer if the circulation to the part is impeded by a bandage or tourniquet. He also observed that the injection of a nerve with saline, water and other fluids could produce anesthesia. Halsted's discovery soon came into general use, especially by dentists who honored him by presenting him with a gold medal in recognition of his work.

Halsted's discovery stimulated an enormous amount of experimentation directed towards:

(a) Search for new and less toxic local anesthetics, and for suitable antidotes.
(b) Use of local anesthesia for minor and major surgery where a general anesthetic is contraindicated.
(c) Addition of pressor substances such as epinephrine, etc. to prolong the effect of the local anesthetic.
(d) Use of local anesthetics for spinal anesthesia, regional anesthesia, infiltration, etc.
(e) Broadening the use of local anesthetics and perfecting the technic of their administration.

Fig. 7.—Dr. Halsted in 1909.

The addiction potentialities of cocaine were not known when Halsted began his experiments, and he became temporarily addicted to the drug. Fortunately, however, through almost superhuman efforts and the sympathetic understanding and encouragement of a few intimate friends, he conquered this affliction. It left him with a changed personality. MacCallum states that before this episode, Halsted "was a powerful, restless and tireless worker spending himself physically and mentally in endless operations . . ." After this episode, "he came back to a far more thoughtful, leisurely life, with time for reflection and contemplation of his surgical problems, a life in the end far more fruitful than . . . the strenuous rush . . . in New York." Perhaps, in his case it was probably no misfortune, but rather the reverse (Heuer).

In 1886 Halsted came to the Johns Hopkins University at the invitation of William H. Welch in whose pathological laboratory he began his work on intestinal sutures. In 1890 he was appointed the first Professor of Surgery and Surgeon-in-Chief of the newly opened Johns Hopkins Hospital. During the thirty-two years as the head of this department he instituted the residency program, encouraged young men in his department to develop special skills. He was not a dynamic or inspiring teacher of undergraduates, because of his quiet and reserved manner. However, by his irresistible example and encouragement of his assistants and residents, he built up one of the finest and most scholarly surgical departments in this country. A large number of his former residents became professors of surgery in some of our leading medical schools; others became leaders in their chosen field of work.

In 1890 he made another noteworthy contribution by introducing rubber gloves into the operating room. This discovery had a romantic aspect. Dr. Halsted's head nurse in his operating rooms suffered from dermatitis caused by the antiseptic cleansing solutions. With tender concern for the welfare of this woman, who later became his devoted wife, he explored the possibility of using rubber gloves to protect her hands. This exploration proved eminently successful.

Halsted, like Lister, had a thorough knowledge of anatomy, physiology and pathology and reduced surgical problems to their biologic basis. He sought advice from colleagues in the basic sciences, then proceeded to experiment on laboratory animals, exercising the same meticulous care with which he was accustomed to operate on patients. William H. Welch, in his introduction to MacCallum's informative biography of Halsted, characterizes his attitude towards research in the following statement: "Halsted was a lover and seeker of truth, possessing in eminent degree the qualities of the productive scientific investigator—richness in suggestion, clearness in formulation of his problems, keenness in observation, ingenuity in adapting experiment to solution of the problem in hand and lack of bias in the interpretation of results, even when in conflict with his own published opinions. As others have pointed out, there was much of the spirit of John Hunter and of Claude Bernard in the emphasis placed by Halsted upon experimental, biological methods in the study of many surgical problems."

His numerous contributions to surgery were best summed up in 1923 in a memorial address by Matas, who said: "In every advance that has marked the progress of surgery in the last thirty years (1890-1920) we find the impress of his hand and the reflex of his brain."

Hemorrhage and Restitution of Blood Volume.—The third great problem that hampered the progress of surgery for centuries is the control of hemorrhage and the maintenance or restitution of blood volume. The need for the restitution of blood and its use as a medicament goes far back into the ancient civilizations of the Egyptians and Hebrews. Blood was taken orally as a medicament for the restoration of blood in the body and because the ancients believed that therein lay the spirit of life. Efforts to control hemorrhage date back to the time of Hippocrates. It is not certain whether he introduced cauterization, but the practice came into general use during his time and remained in vogue for many centuries. It was not until the time of Paré (sixteenth century) that the cautery iron was discarded in favor of the ligature; it was already known to Galen, who, however, restricted its use to superficial wounds and never used it in amputations. Paré is credited with the reintroduction of the ligature, which he found preferable to cauterization for arresting hemorrhage in amputations. The next important advance was made by Morel, a little-known French surgeon who invented the tourniquet. More recently, Lister introduced the absorbable catgut ligature, having proved by animal experimentation that the ligature was resorbed. Many other refinements have since been added and need no further elaboration at this point.

William Harvey's demonstration of the circulation of the blood (1616) is ranked as one of the great contributions of all

Fig. 8.—Meeting of Pasteur and Lister at the Sorbonne, Paris, in 1892, on the occasion of Pasteur's seventieth birthday. (Painting by Count Calvi di Bergolo in the International Surgeons' Hall of Fame in Chicago.)

time. His work, like many other important discoveries, opened the way for a great deal of scientific work. Harvey did for physiologic experimentation what Vesalius did for anatomy.

Two further discoveries followed in rapid succession. Sir Christopher Wren and Robert Boyle in 1656 succeeded in injecting drugs intravenously into a dog by using a quill attached to a syringe. The first substances injected were opium and an infusion of oxide of antimony. This insignificant quill was the ancester of the modern hypodermic needle.

In 1654 Francis Folli, a Florentine physician, made the first successful transfusion of blood to an animal. He inserted a silver tube into the artery of a donor and a cannula of bone into the vein of the recipient. These were connected by a tubing of animal blood vessels. The groundwork for the use of blood transfusion without serious reactions was laid by the work of Landsteiner in 1900, when he introduced blood typing. This important discovery removed one of the great obstacles to the use of whole blood transfusions.

Another great problem in blood transfusion was the clotting of blood. To overcome this difficulty a number of technics were employed, such as paraffin-coated tubes, direct arteriovenous anastomosis and the removal of blood in a syringe, with immediate reinjection into the recipient's veins. The prevention of clotting led to the search for substances that would act as anticoagulants. The first pharmacological agent to retard clotting was hirudin (obtained from leeches). It was developed by John J. Abel and his associates, who used it in their studies of vividiffusion and vividialysis (1913-1914). At about the same time, sodium citrate was introduced by Howell, who obtained it from the liver. From this point onward, a great deal of fundamental research was done on the factors that govern the coagulation of blood and the physiologic role of the various components of blood. Perhaps one of the most useful developments in this field was the establishment of blood banks, which originated in Russia in 1936. The first institution of this kind in the United States came into being at the Cook County Hospital in Chicago, through the efforts of the pharmacologist Fantus. The phenomenal growth of blood banks and their great service in the saving of lives of both civilians and wounded soldiers is now common knowledge.

The most recent development in this field is the search for agents that are useful as blood substitutes. At present there is intense activity on the part of experimental teams composed of chemists, pharmacologists and surgeons, who are evaluating the numerous substances proposed as blood substitutes. It is recognized that the blood substitutes are not adequate for replacing whole blood; their primary purpose is to maintain blood volume, and they may be most effectively used in combating circulatory failure, especially in emergencies. Their main inadequacy is that they are not substitutes for the blood proteins and cellular elements. With these limitations, the need for the conservation of human whole blood and its components remains the paramount problem (*The Status of Blood Substitutes*, J.A.M.A. 147, 658-660, 1951).

Shock resulting from blood loss, burns or severe trauma is a problem intimately associated with wars and possible civilian disasters. It is receiving serious consideration in many quarters, in order to forestall mass disasters from a possible atomic bomb attack. The treatment of burns centers around the control of the loss of plasma, prevention of infection and the maintenance of an efficient circulation (see chapters 42 and 43 of *Modern Treatment*, by Austin Smith and Paul Wermer). The loss of plasma can be minimized by the use of pressure bandages, infection can be controlled by the newer anti-infective agents, and the circulation can be maintained by the use of the so-called plasma volume expanders, provided there has not been too great a loss of blood; otherwise, whole blood is indicated.

The prospect of coping with the injuries resulting from an atomic bomb explosion is a frightening task and presents the doctor with the colossal challenge of treating these injuries amid confusion and hysteria. The medical profession should accept this challenge in a spirit of calmness and determination, with the knowledge that workers in many fields are ready to assist the physician in every possible way.

It hardly needs mention that the progress in modern knowledge of hemorrhage and its control was gained by the cooperative efforts of workers in many fields of medical science.

Conclusion.—With the further development of aseptic technics and, more recently, the introduction of the anti-infectives, especially the sulfonamides and antibiotics, it may be truly said that infection is no longer an insurmountable problem in surgery. The great stimulus from the work of Pasteur and Lister has resulted in an enormous volume of research in many fields and illustrates the far-reaching influence of an important discovery.

With the solution of their three major problems, pain, infection and hemorrhage, surgeons have been able to utilize fully the technologic advances of the biologic and physical sciences, to carry out their own experimental investigations, and, in collaboration with workers in other fields, to develop the great potentialities of this branch of the healing art.

SELECTED SOURCES

Anesthesia, Antisepsis, Asepsis

Great Doctors. By Henry E. Sigerist (English translation of "Grosse Aerzte eine Geschichte der Heilkunde in Lebensbeldem," Lehmanns Munich, 1932) 1933—George Allen & Unwin Ltd., London.

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The Surgery of Theodoric (Vol. I). (Translated from the Latin by Eldridge Campbell and James Colton.) New York: Appleton-Century-Crofts, Inc., 1955.

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Medieval Medicine. By J. J. Walsh. London: A. & C. Black, Ltd., 1920.

The Historical Relations of Medicine and Surgery. By T. Clifford Allbutt. New York: MacMillan and Company, 1905.

Louis Pasteur. By René J. Dubos. Boston: Little, Brown & Company, 1950.

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Lord Lister. By John Godlee Rickman. London: Oxford University Press, 1924, 3d ed.

Joseph Baron Lister (1827-1927). By A. Logan Turner. London: Oliver & Boyd, 1927.

Lord Lister. By Douglas Guthrie. Edinburgh: E. & S. Livingstone, Ltd., 1949, and Baltimore: The Williams and Wilkins Company, 1949.

The Collected Papers of Joseph Baron Lister. Edited by Hector Cameron, Watson Cheyne, Rickman Godlee, C. J. Martin and Dawson Williams. Oxford: The Clarendon Press, 1909.

William Stewart Halsted. By W. G. MacCallum. Baltimore: The Johns Hopkins University Press, 1930.

Heuer, G. J.: Dr. Halsted, Bull. Johns Hopkins Hosp. 90:1-80, 1952.

William S. Halsted (1852-1922): Collected Surgical Papers. Baltimore: The Johns Hopkins Press, 1924. In 2 volumes.

Hemorrhage and Restitution of Blood Volume

The History of Hemostasis. By S. C. Harvey. New York: Paul B. Hoeber, Inc., 1929.

Ficarra, B. J.: The Evolution of Blood Transfusion, Ann. Med. History 4:302, 1942.

Local Treatment of Thermal Cutaneous Burns, J.A.M.A. 125:969, 1944.

Jenner threw himself with enthusiasm into Hunter's work on comparative anatomy, and acquired the latter's beautiful technique in preserving specimens. He spent two years in the house in Jermyn Street and then returned to the life of a country doctor.

Soon after Jenner's return to Gloucestershire an interchange of letters began which lasted until Hunter's death. Jenner greatly treasured these letters from "the dear man," as he called his friend, and kept them together in a cover inscribed "letters from Mr. Hunter to E. Jenner." Fortunately many of them have survived and they help us to see a side of John Hunter which was not turned to the rest of the world. . . . It was a free-and-easy correspondence between two friends who trusted each other in all things and had no secrets, between Hunter in London and "his second self down in Gloucestershire" as Paget puts it. There are the usual forceful Hunterian remarks and expletives. a few family details. thanks for presents of fish and cheeses from the West Country, clinical details about patients, chat concerning hobbies and a wealth of running commentary on natural history subjects. especially hedgehogs ad cuckoos. They were written in spare moments and like all good letters quite spontaneously; probably most of them were jotted down late at night after a long day's work, and they were generally undated. They are the letters of a full life, bubbling over with ideas and questions to which no man knew the answers.

—*Gloyne*

New Books

BOOKS RECEIVED

The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however is not to be taken as criticism of the merit of the book.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Pathology and Surgery of the Veins of the Lower Limbs. By Harold Dodd and Frank Cockett. Baltimore: The Williams & Wilkins Company, 1957. Pp. 462, illustrated.

Spinal Cord Compression. By I. M. Tarlov. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 147, with 41 illustrations.

Functional Bracing of the Upper Extremities. By Miles H. Anderson. Springfield, Ill.: Charles C Thomas, Publisher, 1958. Pp. 463. Illustrated.

The Clinical Management of Varicose Veins. By David Woolfolk Barrow. New York: Paul B. Hoeber, 1957. Pp. 167, with 70 illustrations.

Homosexuality, Transvestism and Change of Sex. By Eugene de Savitsch. London: William Heinemann Medical Books Ltd., 1958. Pp. 120.

A Short Practice of Surgery. By Hamilton Bailey and McNeill Love, with chapters by John Charnley, William Cleland and Geoffry Knight. London: H. K. Lewis & Co., Ltd., 1959; Philadelphia: The J. B. Lippincott Company, 1959. 11th ed. Pp. 1389, with 1,697 illustrations, 285 in color. *Reviewed in this issue.*

Congenital Anomalies of the Hand and Their Surgical Treatment. By Arthur Joseph Barsky. Springfield, Ill.: Charles C Thomas, Publisher, 1959. Pp. 165, with 76 illustrations. *Reviewed in this issue.*

Personality and Nature in Modern Medicine. By Franz Buchner. New York and London: Grune and Stratton, 1958. Pp. 36. *Reviewed in this issue.*

The Management of Fractures and Dislocations. By Anthony de Palma. Philadelphia and London: The W. B. Saunders Company, 1959. In 2 volumes. Pp. 960, with 1,927 illustrations. *Reviewed in this issue.*

Ptoses Abdominales et Prolapsus Pelviens: Clinique et Thérapeutique Chirurgicales (Abdominal Ptosis and Pelvic Prolapse). By Lucien Diamant-Berger. Paris: G. Doin et Cie, 1958. Pp. 194, with 119 illustrations.

John Jacob Abel, M.D. Baltimore: The Williams & Wilkins Company, 1957. Pp. 80. *Reviewed in this issue.*

Reflux Oesophagitis. By J. G. Ton. Uitgeverij: Born, N.V. Pp. 116, with 31 illustrations. *Reviewed in this issue.*

Milestones in Modern Surgery. Edited by Alfred Hurwitz and George A. Degenshein, with a foreword by J. Engelbert Dunphy. New York: Paul B. Hoeber, Inc., 1958. Pp. 520. Illustrated.

Neurological Basis of Behavior. (CIBA Foundation Symposium.) Edited by G. E. W. Wolstenholme and C. M. O'Connor. Boston: Little, Brown and Company, 1958. Pp. 400, with 109 illustrations.

A Short Practice of Surgery. By Hamilton Bailey and McNeill Love, with chapters by John Charnley, William Cleland and Geoffry Knight. London: H. K. Lewis & Co., Ltd., 1959; *Philadelphia:* The J. B. Lippincott Company, 1959. 11th ed. Pp. 1389, with 1,697 illustrations, 285 in color.

The eleventh edition of this monumental work is a new edition in fact as well as in intention. No effort has been spared to bring the material strictly up to date, and the chapters on the thyroid, the ductless glands, *the liver and the stomach* have been completely rewritten. There are two completely new chapters, one on radiotherapy and one on fluid balance. The bibliographic references have been rechecked for accuracy, brought up to date and, when necessary, amplified.

In their preface to the new edition, the authors say rather ruefully that the Short Practice is not so short as it formerly was! We cannot sincerely say, however, that we foresee any complaints on this score. The book covers practically every known facet of surgical knowledge and practice and is written with the same masterly conciseness, clarity and economy that have always characterized it. What its character is well known to be is attested by the fact that the number of copies printed to meet the demand now exceeds 104,000; the demand may be judged by this and by the fact that an American edition will shortly be presented by the J. B. Lippincott Company of Philadelphia.

The majority of the text is the work of the two senior authors, whose world-wide reputation for skill in surgery and integrity in authorship are beyond praise. Mr. Bailey's work includes the new chapter on fluid and electrolyte balance, as well as the chapters dealing with surgical treatment of the face, jaws and palate; the teeth and gums; the mouth and tongue; the salivary glands; the neck; the thyroid gland and thyroglossal tract; the parathyroid, thymus and adrenal glands; the pharnyx; the esophagus; the stomach and duodenum; the spleen; the liver; the gallbladder and bile ducts; the pancrease; the intestines; the rectum and anal canal; symptoms of urinary disease, in*vestigation of the urinary tract and anuria*; the kidneys and ureters; the urinary bladder; the prostate and seminal vesicles; the urethra and penis; the testes and scrotum, and infections of the hand. Mr. Love contributes chapters on nonspecific infections and wounds; specific infectious diseases; tumors; ulceration and gangrene; blood and blood vessels; lymphatics and lymph nodes, and the skin. Two chapters were written by Mr. Bailey and Mr. Love in collaboration, one on the peritoneum, the omentum, the mesentery and the retroperitoneal space, and the other on the vermiform appendix. In four chapters, Mr. Charnley discusses injuries and diseases of the bones and joints, and in two others, respectively, the muscles, tendons and joints, and deformities in general. The chapter on thoracic surgery and the one dealing with the heart and pericardium are the work of Mr. Cleland. Four chapters have been written by Mr. Knight, on nerves, the head, the cranial nerves and the spine respectively.

The work is too well known and too widely used to require any introduction to the reading public, the first edition having appeared in 1932. A special commendation is due to the layout artist, who, as far as is humanly possible, has placed the illustrations on the page of reference—not an easy task, as anyone knows who has tried it. The number and excellence of the illustrations also compel praise; they are uniformly clear and well reproduced and offer an object lesson in economy of space. Those in color are highly reminiscent of the illustrations in Mr. Bailey's earlier definitive work on the vanishing art of diagnosis from the physical signs. The fact that there are 285 of these is further evidence, if any were needed, of the high and exacting standards maintained by the authors.

It might well go without saying, if it were not such a pleasure to say it, that this book is, as always, indispensable to the library of every general surgeon, every hospital and every medical school.

—M. T.

Congenital Anomalies of the Hand and Their Surgical Treatment. By Arthur Joseph Barsky. Springfield, Ill.: Charles C Thomas, Publisher, 1959. Pp. 165, with 76 illustrations.

This is a compact but useful monograph. The author is an attending surgeon for plastic surgery at Mount Sinai Hospital, New York City, and Professor of Clinical Surgery, Albert Einstein College of Medicine, New York City. He holds many other hospital appointments. This small book includes a brief discussion of the causation of congenital anomalies, a chapter on heredity in the transmission of these deformities from one generation to another, the embryologic picture and the diagnosis and treatment of both simple and complex congenital deformities of the hand. All who may be called upon to diagnose and treat such deformities will want a copy of this book.

—EDWARD L. COMPERE, M.D.

John Jacob Abel, M.D. Baltimore: The Williams & Wilkins Company, 1957. Pp. 80.

The Williams and Wilkins Company has published, for private distribution particularly to members of the American Society for Pharmacology and Experimental Therapeutics, a limited edition of papers by and about John Jacob Abel, who has been called the "father of American pharmacology."

Dr. Abel was a member of the first faculty of the Johns Hopkins School of Medicine and its first professor of pharmacology. In his long teaching career—1893 to 1938—his primary interest was the role of chemistry in scientific medicine. Best known for his work on the hormones, he is recognized as the man who first achieved the isolation of insulin in pure crystalline form.

Dr. Abel was also instrumental in the founding of the *Journal of Pharmacology and Experimental Therapeutics*, and was its editor from 1909 to 1932.

The book contains two papers about Dr. Abel and four written by him (two in collaboration with colleagues), reprinted from the medical literature. It is published to mark the one hundredth anniversary of Dr. Abel's birth, and is a worth-while addition to the history of medical progress.

—O. C.

The Management of Fractures and Dislocations. By Anthony de Palma. Philadelphia and London: The W. B. Saunders Company, 1959. In 2 volumes. Pp. 960, with 1,927 illustrations.

The author describes this rather massive two-volume set as a "comprehensive atlas of fractures and other joint injuries." That, indeed, is an excellent way to describe it. Each of the two volumes measures 9 by 12 inches, and the two together contain 960 pages with 1,927 illustrations. The text is limited to brief descriptions of the deformity, the prereduction roentgenogram, the technic of reducing each fracture or dislocation and the method of fixation or immobilization of the fracture after reduction. With few exceptions the illustrations are line drawings, which are simplified so that the story told by each can be grasped at a single glance. Dr. De Palma, who is Professor of Orthopaedic Surgery at Jefferson Medical College, Philadelphia, has described the method he personally prefers to use in the treatment of each injury, but he also lists alternate methods of treatment. Within the two volumes almost every conceivable fracture or dislocation of the spine and the extremities is described and illustrated, so that the essential characteristics of the lesions are readily recognized and the detailed methods of reduction, immobilization and postreduction management are clearly shown step by step.

—EDWARD L. COMPERE, M.D.

Vascular Surgery. By Geza de Takats. Philadelphia: W. B. Saunders Company, 1959. Pp. 726, with 382 illustrations.

Dr. de Takats has presented a most complex subject in a clear and understandable fashion. True it is that no author is omniscient; however, little is left wanting in this all-inclusive work on vascular surgery. For special commendation must be mentioned Chapter 5, "The Interview with the Patient" and Chapter 6, "The Examination." These dovetail beautifully with the presentation of the more technical and theoretical sections. Three hundred and eighty-two illustrations, roentgenograms and microphotographs embellish the text. This book can be recommended to anyone interested in the subject of vascular surgery.

—PHILIP THOREK, M.D.

Personality and Nature in Modern Medicine. By Franz Buchner. New York and London: Grune and Stratton, 1958. Pp. 36.

This brief but thought-provoking essay, excerpted from the author's book The Spiritual Standpoint of Modern Medicine (Freiburg in Breisgau, Germany: Hans Ferdinand Schultz, Publisher), was presented as the Festival Lecture on Faculties Day at the Fifth Centennial of the University of Freiburg in Breisgau on June 27, 1957. Those already familiar with Dr. Buchner's philosophic profundity will welcome this expression of it from the medical point of view; those not acquainted with his work have a pleasant surprise in store.

Reflecting on the origins of human disease, Dr. Buchner presents two possibilities: (1) that disease is inherent in the natural premises of human life and represent part of the vulnerability and perishability of physical existence, and (2) that disease is the result of man's freedom, "the result of his individual biography"—i.e., the fruit of his neglects and inhibitions, his follies and excesses. From these two postulates, which he considers in turn, he proceeds to a penetrating consideration of the human body in relation to the human soul. The close-woven interrelations of soma and psyche are explored. That some diseases and disturbances are psychosomatic is taken as a matter of course today; Dr. Buchner carries this acceptance to the point of inquiring whether the true reality of human existence is not represented by the soul, the body being only its symbol.

This speculation, in one form or another, is almost as old as the human race itself, for no subject is more fascinating to the meditative mind. No definitive answer, of course, can be given, but this, in Dr. Buchner's opinion and that of many other philosophers, does not alter the fact that modern medicine is challenged to neglect neither the one part of the human entity nor the other, since enough has been learned of man's nature to establish their interdependence. The essay closes with the only conclusion thus far possible: ". . . it remains the great task of scientific medicine to search with renewed interest for the essence of human 'bodiliness' and to regard man as a unit of body and soul, a task indispensable for the self-realization of man."

—M. T.

Tuberculosis: Prevention and Control. By H. W. Hetherington and Fannie W. Eshleman. New York: G. P. Putnam's Sons, 1958. 4th ed. Illustrated with photographs and charts.

Revised, reset and retitled, this fourth edition of a classic work takes cognizance of the increasing importance and success of preventive measures conducted through public health service. The authors see the care of the tuberculous patient as no longer a matter for the specialist only, but one for the physician, the family and the clinic. The development of chemotherapy, they point out, has shifted a great deal of responsibility to members of the nursing profession to persons working in dispensaries and to those engaged in family visiting services. The book is intended primarily for these groups but should be noted also by welfare organizations and physicians in communities where public service is restricted.

—O. C.

Reflux Oesophagitis. By J. G. Ton. Uitgeverij: Born, N.V. Pp. 116, with 31 illustrations.

Reflux esophagitis remains an intriguing and challenging subject. Dr. Ton has written a monograph that should be read by practitioner and specialist alike. As Prof. Boerema has correctly stated in his foreword to this book, esophagitis has been neglected in many modern textbooks. A most provocative and logical discussion of the so-called cardiac sphincter is presented. It is further interesting to note that the terms "peptic esophagitis," "reflux esophagitis," and "peptic ulceration of the esophagus" are looked upon as different aspects of the same disease. The author has the ability to condense much practical material into a few sentences. In a most pithy way he discusses the tetrad of symptoms of this condition, namely, pain, dysphagia, hemorrhage and regurgitation. The text is amplified by clearly depicted illustrations. The author has done a herculean task in assembling the 520 references that appear at the end of the book. This book can be recommended most highly to anyone interested in the subject of reflux esophagitis.

—PHILIP THOREK, M.D.

Third Biennial Conference on Charitable Foundations. New York: New York University Press, 1957.

New York University established its Conference on Charitable Foundations in 1953. The second session was held in 1955 and the third in May 1957. The purpose of the conference is to provide a recurring forum for persons interested in the purposes, functions and problems of foundations.

These published proceedings represent the papers read at the 1957 conference, mostly by active workers for foundations. Subjects discussed were fields of activity; problems in the making of grants; administration; law, and taxes. Each paper was followed by a question-and-answer period, the gist of which is reproduced here.

Here is the latest thought on all these matters, and the volume should prove valuable to all who are interested in the conduct of foundations.

—O. C.

Milestones in Modern Surgery. Edited by Alfred Hurwitz and George A. Degenshein, with a foreword by J. Engelbert Dunphy. New York: Paul B. Hoeber, Inc., 1958. Pp. 520. Illustrated.

The glorious history of surgery—the work and lives of the men who in the past hundred years have developed the healing art to its present scientific level—reads like romance. It *is* romance, as exciting in retrospect as in the limitless horizons this groundwork is pushing back for the future.

This volume comprises the original papers of the "greats" in surgery, a galaxy of such shining lights as Auer, Billroth, Carrel, Crile, Fleming, Paré, Reid, Singer and some thirty others.

There are twenty-eight "milestones" in all, presented under 13 headings: *Hemostasis, Anesthesia, The "Milieu Intérieur," Wound Healing, Head and Neck Surgery, Breast Surgery, Hernia, Gastrointestinal Surgery, Intestinal Obstruction, Thoracic Surgery, Cardiovascular Surgery, The Soul of the Surgeon,* and *Milestones on the Horizon.* It is profusely illustrated. Each section is preceded by a brief prefatory history of the development in that field, with biographical notes and a photograph of the surgeon whose paper is presented. In each case the editors have chosen the paper which, in their judgment, is the most significant in that field. A second criterion was that the paper be well written and that it demonstrate the scientific method. The last rule governing the choice was that the principle or operation described, whether in its original form or some variation thereof, is still of current value.

Consequently, this collection of papers is not only of current but of lasting worth and is a milestone in itself. Every surgeon who is devoted to his art and to the advancement of surgery should own and read this book.

MAX THOREK, M.D.

Abstracts from Current Literature

Survey of the German Literature on General and Orthopedic Surgery since 1956*

PROF. K. BOSHAMER, M.D., F.I.C.S.
WUPPERTAL-BARMEN, GERMANY

TRANSLATED BY
KURT EICHELBAUM, M.D., F.I.C.S.
CHICAGO, ILLINOIS

Spinal Column.—According to Meisenheimer, Schanerman's disease is related to congenital disturbances of subchondral ossification. These lesions, according to him, do not have the character of aseptic necrosis but are disturbances of ossification in the area of the vertebral and plate, which consists of hyaline cartilage. Lindeman and Rathdke discuss atypical phytosis occurring in the adolescent, which show a striking narrowing of the intervertebral disk. In their opinion, a congenital disturbance, such as aplasia of the disk or underdevelopment of the chondra, may be responsible for the narrowing of the disk. Jentschura ascribes scoliosis in the newborn, at least in a certain number of cases by fixation of habitually assumed postures in the presence of poorly developed connective and fibrous tissue. Muscular contractures eventually cause the spinal deformity in which rickets and too much weight bearing by the small vertebral joint play important roles. Lange emphasizes the influence of disturbances of the inner secretory system on the development of so-called idiopathic scoliosis. Just prior to the progression of the deformity, which always takes place about the time of puberty, lesions of the epiphyses and local osteoporosis can be demonstrated. Changes in the protein metabolism and increased nitrogen discharge point to a disturbance of function of the adrenal glands.

In the conservative treatment of scoliosis, the essential purpose of which is to prevent further deterioration, the active muscle-strengthening therapy is superior to passive correction, according to Jacoby and Penners. If, however, this type of treatment does not prevent further progress of the deformity, Lange considers operation indicated—not, however, until the patient is 14 years old. Lange reports his experiences with a span onlay and fusion of the facet joints, emphasizing the importance of the correct choice and pretreatment of the section to be fused.**

Schramm recommends the pillar plasty of Schade. Fixation of the spinal column with two plates similar to a Lane plate, combined with a span according to Reimers, is not accepted by Lange.

Spondylolisthesis in the vercila section of the spine is rare. Schlueter and Lissuer add 3 recent cases to the literature. In their opinion, hysplasia of the vertebral arch is the cause of this condition. In Brocker's, dysplasia of the arch is hereditary and is the decisive factor. Haubery and Schlueter are convinced that the treatment of this condition should be conservative if the cervical portion of the spine is stable and the nervous system intact;

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*Continued from April issue.

**If by "pretreatment" correction of the deformity is meant, the review does not say so.—*Translator.*

in the case of instability and symptoms of root compression, however, fusion of the cervical portion of the spine by means of a bone span is indicated. The success of this procedure—75 per cent excellent results, and 20 per cent good results—is convincing.

In 3 cases, Forstmann has observed infectious spondylitis after injury of the anterior longitudinal ligament by a fragment of a grenade and paravertebral infection respectively. He has observed extension of the infectious process over fourteen vertebral bones. Both disk and vertebral body were involved, without defects or abscesses.

In roentgen diagnostic study of the spinal column, views showing the entire column gain more and more importance in the diagnosis of function. Schlegel and Leger discuss the particular technic.

Through the unfailing kindness and cooperation of Prof. Dr. K. Boshamer, F.I.C.S., we are able to make available to Journal readers the second section of a comprehensive outline of surgical progress in Germany since 1956. Prof. Heinz Griessmann of Neumeunger-Holstein summarizes the literature on esophageal surgery; Prof. Dr. Otto Kingreen, F.I.C.S., of Ludenscheid, that on traumatic surgery. Orthopedic surgery is presented by Prof. Dr. Hans Galli of Munich.

The literature from which the material was selected included all significant publications, whether periodical or in the form of books, monographs or Proceedings, to appear in Germany during the period chosen. The compilers have made an excellent selection and presented the facts concisely. The Journal warmly appreciates this timely and valuable contribution. To Prof. Boshamer, who by initiating the work has added another distinguished achievement to his long record of dedicated service to the College ideal of world-wide dissemination of the latest in surgical knowledge, we extend our sincere thanks and congratulations.

The atlanto-occipital juncture is attracting increased attention in roentgen examination of the cervical portion of the spine. Decker, Fischgold and others, in a paper published by the department of Neurology of Munich in cooperation with the Department of Neurology of Paris, show that in order to demonstrate developmental disturbances in this area every roentgen technic (tomographic study, gas myelographic investigation and views demonstrating function) must be employed. Compression at the base and assimilation of the atlas are often merely coincidental. Dickmann and Rohn describe the fullblown neurologic picture of compression of the medulla and also that of compression of the cerebellum, blockage of the spinal fluid and stretching of the nerves of the brain. The treatment is surgical decompression by resection of the arch of the atlas, and possibly resection of the arch of the second cervical vertebra, with enlargement of the foramen magnum and incision of the dura. Nachtwey, Schliak and Rohr describe the symptoms of these changes and, in addition, the occipital vertebral manifestation and the isolated os odontoideum. The significance of the small vertebral joints and of the hemijoints of Luschka, as well as the importance of the course of the vertebral artery in relation to the cervical spinal syndrome, is emphasized (Brocher, Kuhlendahl, Primbs, and Weber), while, according to Hardt and Tepe, spondylosis and osteochondrosis are frequently symptomless. Sprung discusses the physiopathologic aspects of the intervertebral foramens. The obliteration of the root sleeves in this area may account for circulatory disturbances. According to Teichert, skeletal elements derived from the lower orders of the vertebrates may stimulate pathologic changes in the upper cervical portion of the spine. Brocker calls the calcification of the interspinous ligament associated with osteoarthrosis of the spinous processes "calcinosis cir-cum scripta nuchal." Rents of the anterior longitudinal ligament have a serious prognosis, because damage to the cord is frequently connected with this injury.*

The necessary reduction should be done by a closed procedure without general anesthesia, i.e., by slow steadily increased traction, followed by surgical stabilization. In the lumbar area Barthman suggests resection of the spinous processes if they present osteoarthritic changes, as, in his opinion, they frequently do in persons of middle and advanced age.

Glauner and Marquardt, in their book *The Roentgen Diagnosis of the Hip Joint,* discuss the normal hip joint, its development and its pathologic aspects. The illustrations are very good.

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*Obviously it is the possible vertebral dislocation due to such injury that accounts for the damage of the cord.—*Translator.*

Abstracts of Papers Presented at the Eighth Annual Congress of the Austrian Section, International College of Surgeons, Vienna, Oct. 18, 1958

Pelvic Osteotomy for Roof of the Acetabulum

K. CHIARI, M.D., F.I.C.S.

For repair of the roof of the acetabulum surgical intervention is advised for children beyond the fourth year of life, since a spontaneous development of the roof of the acetabulum cannot be expected.

The best known of these methods are those advocated by Spitzy and Lance. They make possible the creation of a roof for the acetabulum by bone transplantation which by proper conditions of weight bearing can be rebuilt into a good support for the head of the femur. Even with the formation of a good roof, however, the pathologic position of the femoral head cannot be influenced, so that the insufficiency limp is often maintained even after a successful operation.

A new surgical method has been developed, which results in the formation of an acetabular roof and in correction of the position of the femoral head by the tendency toward a medial shift at the same time.

The method is as follows: An osteotomy of the pelvic isthmus is performed just above the insertion of the capsule of the hip joint. After the performance of an extra-articular osteotomy the hip joint is shifted medially by abduction. Technic and results of the surgical procedure are demonstrated by film.

Thus far the operation has been performed in 58 cases. In 32 cases surgical intervention was indicated by luxations that were treated without open reduction according to Lorenz. This led, however, to an insufficiently developed socket with a tendency to recurrent luxation.

In 10 cases, children beyond the age of 4 years were admitted with complete luxations and without previous treatment. In these instances the hip joint was reduced without surgical intervention. Most of them had to be first immobilized in Lorenz' primary position for two months. Afterward, the position of the hip joint was changed into abduction and internal rotation. After two more months the pelvic osteotomy, with formation of a roof for the acetabulum, was performed. In the remaining 16 cases there were subluxations of moderate degree with flatness of the socket, which during infancy had caused neither subjective nor objective symptoms.

The ages of the patients were between 3 and 19 years. More than three-fourths of the patients were under 12 years of age.

The results of the operation can be designated as favorable. Of the 58 operations, 41 were done more than a year prior to the time of writing, and the results in 31 instances can be classified as very good. The requirements were complete mobility of the hip joint, normal gait and a negative Trendelenburg phenomenon. Nine patients were improved. The principal remaining difficulties are a moderate limp, insufficiency and, in a few

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**Chief of the Orthopedic Department of the First Surgical Clinic, Vienna, Prof. Dr. L. Schoenbauer, Chairman.

cases, moderate limitation of mobility. In only 1 case can the result be considered unfavorable. The reason for the less favorable results consisted, in 2 cases, of an insufficient dislocation of the hip joint medially. In most of the other cases the incomplete success was due to unfavorable conditions existing prior to surgical treatment. Especially to be mentioned here are antirotation of the neck of the femur and changes in the femoral head prior to the operation. In the case in which the result was designated as poor, there was severe coxa valga, the correction of which was performed recently.

The patients with a five-year interval after the operation show steady, good function. In 1 boy an ideal acetabular roof was rebuilt spontaneously and has remained without unfavorable changes for the past five years in spite of the boy's engaging in sports.

Since the majority of the patients were girls, the transverse narrowing of the pelvis due to the operation seemed important. It can be shown by several diapositives that the pelvic entrance, after considerable initial narrowing, seemed to widen again spontaneously by resorption of the bony spike in the inner part of the pelvis. It is to be hoped that at least some of the girls who underwent the operation may later be delivered spontaneously. Up to the time of this report 3 patients have been operated on bilaterally. The second surgical intervention was requested by the parents after the successful operation of the first side. In these cases the probability of an eventually necessary cesarean section was emphasized.

A higher age limit is indicated if arthrosis deformans is already in the process of developing. It would influence the result unfavorably. About 20 years of age is considered the upper limit.

In a 17-year-old girl, that one year after undergoing an operation for a high grade subluxation, reveals a highly favorable result both clinically and roentgenologically.

Conclusion. — The operation, within the aforementioned limits of indication, can be recommended. It has the advantage that without bone transplantation a strong acetabular roof can be formed. Immobilization in a cast is maintained only four weeks. The mobilization requires only a short stationary after-treatment. Function is gained quickly. The after-treatment consists mainly of active exercise to strengthen the insufficient gluteal muscles.

Treatment of Scoliosis

F. MEZNIK, M.D.

There are certain common principles in the conservative and surgical treatment of the different kinds of scoliosis. Although scoliosis in the overwhelming majority of cases must be approached conservatively, it must be pointed out that the only moderately slow progressive course in most cases is not the result of the therapy. This holds true first of all for idiopathic scoliosis. Of all conservative methods of treatment the combined symnastic-posterior plaster mold seems to be most justifiable. Even if no prominent correction can be expected from this approach, the entire body is strengthened and the patient only moderately burdened. Braces are indicated only in the presence of severe paresis-scoliosis when operation is not undertaken. An important point of any conservative treatment for scoliosis is roentgen control, in order to arrive at an objective estimate of its progress, in order to determine the proper time for intervention.

As to the surgical approach, in my personal experience the method employed by Cobb of New York offers good possibilities of correction. By means of the turnbuckle jacket and by careful approach, the correction is well maintained by the stiffening of the dorsal vertebrae. Operation is indicated for severe paresis-scoliosis, rapidly progressive idiopathic variations and scoliosis accompanying neurofibromatosis.

Treatment of Osteolytic Disease

F. ENDLER, M.D.

The ideal conditions nowadays generally expected of early treatment of the primary osteomyelitic diseases are encountered in only a limited number of cases.

With regard to general treatment as the only therapeutic approach, there are doubts as to its efficiency, especially if treatment is not started during the first few days or if there is a polyvalent resistance of the pathogenic bacteria to the available antibiotics. The indications for surgical intervention, the extent of the operation and the role of antibiotic local treatment in the therapy are discussed elsewhere.

As to the chronic form of osteomyelitis, it has become obvious that the usual extensive evacuation of the involved focus does not always result in permanent cure and that this approach is contraindicated in cases of extreme extension and for patients in poor general condition. Within the scope of these problems, a personal approach to the local treatment of acute and chronic infections has been devised, consisting of intraosseous and periosseous continual installation. Started in 1948, this procedure has been used in about 300 cases with good results. In order to achieve the strongest antibacterial effect, the arrangement of the intraosseous and periosseous passage of the installation in the entire diseased bone and the surrounding soft tissue is of the utmost importance. In addition, continual installation for several weeks and a change to antibiotic and sulfa drugs to which the offending bacteria are sensitive are mandatory. If a necrotic process should develop, the addition of tryptic ferments to the infusion has proved useful. The different questions have been comprehensively illustrated by a large number of diapositives.

Discussion.—Acute hematogenous osteomyelitis urgently demands immediate hospitalization, in a surgical ward, in order to prevent transition into the chronic form by intensive antibacterial treatment.

Progress of the pathologic process in the bone marrow becomes evident radiologically and indicates the time when surgical evacuation of the infected bone marrow is necessary. With a few exceptions healing of the wound, closed without leaving a drain, took place per primam.

Chronic osteomyelitis also needs surgical evacuation, since the bone marrow constitutes the abscess, and after its removal the abscess membrane, in this case the bone, will also heal.

There is no interference with the growth of the bone in any case of infantile, acute or chronic osteomyelitis, since the growth does not take place in the marrow but in the corticales of the epiphysis.

Investigations of local applications of antibiotics proved unsuccessful. They required a long stay in the hospital, while radical evacuation of the bone marrow resulted, in most cases, in *restitutio ad integram* in a few weeks.

Failure of postoperative healing is almost always correctible.

The conservative approach to the chronic form of the disease can result only in remissions at variable intervals and of variable duration. Burkle de la Camp described a case of recurrence after 52 years and Krafft reported recurrence after 32 years.

Only radical evacuation of the infected marrow can cure chronic osteomyelitis.

According to 103 personal cases, closely observed, this therapy, started in 1952, is justified.

Disturbance of healing, which may occur with this therapy, is attributable to poor technic or to the presence of B. Proteus pyocyaneus.

I am definitely in favor of surgical evacuation of the diseased bone marrow.

Muscular Tonus-Asymmetry as Cause of Abnormal Manifestations of the Lumbar Portion of the Spine*

HERBERT MOSER, M.D., F.I.C.S.**

A hypertonic asymmetric pull of the psoas muscles leads to an abnormal appearance at the site of the lumbar portion of the spine. Pain develops. Gradually small spikes are formed, which are not the symptoms of spondylosis but denote the structural adaption of the bone in response to the nonphysiologic pull at the site of the insertion. At the same time, the lumbar portion of the spine becomes tilted with the concavity to the diseased side.

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*Review and excerpts of a lecture on this topic.

**Professor of Surgery.

In addition to the roentgen and pathologic signs, pathologic hypertonus of the psoas muscle reveals the following clinical symptoms: 1. The psoas of the one side is painful on touch of the lower part of the abdomen, and also hardened. The examination is performed while the stretched leg is raised with the patient supine.

2. The point of insertion of the psoas at the trochanter minor is painful on pressure at the end phase of outer rotation of the thigh with the leg flexed and abducted and the patient in the supine position.

3. The points of insertion of the psoas at the lumbar portion of the spine reveal pulling pain during the end phase of internal rotation of the abducted and overextended leg with the patient prone.

The roentgen signs, together with the typical painful points during certain functional phases, constitute the psoas syndrome.

This syndrome is also associated with intraabdominal diseases, especially of the small pelvis, in which the psoas is included directly or by reflex reaction; frequently it persists, even after the intraabdominal process has ended, and may become a source of possible false diagnosis. The psoas proper may be affected primarily, like other muscles, by rheumatism. The unilateral hypertonus may be the consequence of static causes that burden the psoas of one side more than that of the other. Owing to this long-lasting overcharge the muscle shows gradual changes, functionally and reflectively as well as anatomically. Changes resembling myositis are possible. The slow and long lasting developmental process of myositis contrahens may lead to a contraction of the psoas, with a corresponding shortening as the end stage.

The treatment of unilateral painful spasm of the psoas consists of relaxation. Removal of general or localized pathologic change is the first step. Relaxation is achieved by infiltration of the psoas tendons at their sites of insertion with derivatives of procaine (reports of 42 conservatively treated cases). In case of advanced contraction of the psoas two surgical methods were employed; as the method of choice, infra-inguinal isolated tendotomy of the psoas, and, alternatively (for short and adipose thighs), suprapubic myotomy of the psoas. In both procedures the psoas muscle is isolated and the iliacus muscle carefully spared. This results in a steplike elongation of the entire iliopsoas muscle, and relaxation is accomplished, with preservation of the essential function (report of 5 cases in which surgical treatment was employed).

Unilateral Double Fracture of the Lower Extremity: Treatment and Results

GEORG SALEM, M.D.

The increasing prevalence of automobiles, and especially the increase in their velocity, has resulted in more and more serious accidents. It is the goal of the surgeon not only to save lives but to restore the most nearly complete function, in the shortest possible time, to the injured extremities.

In the scope of this presentation a special type of injury was discussed, the technic of treatment of which is somewhat problematic, namely, unilateral double fracture of the lower extremity.

In such an injury one has to deal mostly with a closed femoral fracture and a compound fracture of the lower part of the leg, and lacerations of the soft tissue may be extensive. In 2 cases not described in this presentation, there was traumatic amputation of the lower part of the leg on the patients' admission to the hospital.

According to the records of 15 cases comprehensively reported from 1950 to 1958 from the emergency department of the Second Surgical University Clinic in Vienna, it was shown that, by closed marrow nailing of the femur fractures, a considerable facilitation of treatment and especially good results could be achieved.

Owing to progress in technic and increased experience, it is nowadays possible to employ the closed method successfully even in nailing communited fractures of the femur by the closed method.

After completed osteosynthesis of the femur, further treatment of this type of injury is already facilitated. Full attention can now be given to treatment of the injuries in the soft parts and the fractures of the lower part of the leg.

For immobilization of the fracture of the lower part of the leg only one cast of the thigh is required, and after stability of the femoral osteosynthesis is beyond question, weight bearing is begun four to six weeks after the accident.

Recently, in 2 severely injured patients (still under treatment), a few days after marrow nailing of the femoral fracture, there was also applied to the tibia fracture the Rohrschlitz nail of Herzog, and no fixation bandage was required.

Discussion (*H. Spaengler, M.D.*).—The increase of severe accidents due to the steadily increasing use of motorbicycles should also be emphasized. In this connection double fractures of the lower extremities are encountered more frequently and consequently demand special interest, since their treatment involves great difficulties. At the Emergency Clinic of the First Surgical University Clinic from 1953 to 1958, 33 double fractures were treated, and this total includes only those cases in which the thigh was also involved.

The double fractures treated are divided into 2 groups, the first consisting of shaft fractures of the femur and tibia only and the second group comprising all double fractures associated with multiple fracture of the lower part of the leg.

In children up to 16 years of age extension treatment, combined eventually with additional immobilization by means of a plaster splint or a cast, gives satisfactory results.

In adults, if at all possible, early osteosynthesis of the femur by nailing is recommended, in order that the surgeon may attend as soon as possible to the reduction and fixation of the lower part of the leg.

Osteochondritis Dissecans

ROBERT JELINEK, M.D.

There are many theories about the development of osteochondritis dissecans, but the actual cause is still unexplained. In the full version of this paper the different names used in the literature for the designation of this disease are enumerated and the special features of oseochondritis dissecans pointed out, e.g., its appearance in the long bones as typical localization. Forty-nine cases of osteochondritis dissecans of the knee joint are reported, with treatment over a period of eleven years in the surgical department of the Kaiser Franz Josef Hospital, with the observation that this disease is not confined to youth but may also occur after growth has been concluded. The four stages of osteochondritis dissecans are: (1) necrosis; (2) sequestration or dissecation; (3) formation of free bodies, and (4) the successive stages of healing.

Furthermore, the original cause is discussed, which may contribute to clarification of the etiologic problem. Cases are mentioned in which the clinical picture was that of osteochondritis dissecans but in which the roentgen appearance was normal and operation revealed changes only in the cartilage, without the osseous involvement usually expected in cases of this disease.

A new investigation is mentioned, dealing with regeneration of the cartilage, and an attempt is made to explain the development of this isolated cartilaginous change resembling osteochondritis dissecans. It is emphasized again that the bone in such cases is unchanged. According to these investigations, damage of the superficial zone of the cartilage means the destruction of regenerative potency. Destruction of this zone would also explain the disease of the cartilage, which would be deprived of the enzyme-carrying layer so vital to its nutrition.

The therapy of osteochondritis dissecans is discussed. Conservatism is stressed; surgical treatment is reserved for cases in which no cure can be expected as a result of the conservative approach. Prognostically, osteochondritis dissecans is considered a benign curable disease, although the process of healing is slow.

Discussion (*A. Prieschnik, M.D.*).—Examinations of 1,541 senile joints show an extremely frequent occurrence of cartilage and bone changes described by Koenig as characteristic osteochondritis dissecans. They are located at characteristic sites, grow in typical

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From the Surgical Department of the Kaiser Franz Josef Hospital, Prof. Dr. Herbert Kraus, Chairman.

directions, are usually multiple and regular in localization. There exists a wide discrepancy between the morphologic and the clinical signs in the joints of persons over 65 years of age. This personal material permits several conclusions as to pathogenesis; one of these, favoring the genetically important observation of the speaker, is that frequently only the cartilage is involved. The extent to which old established clinical opinions must be revised is indicated by the demonstrated fact that changes occurring at the elbow, hip, knee and ankle joint are located at sites in which the joints are least subjected to wear and tear.

Surgery of the Umbauzonen

G. MOCHACEK, M.D.*

This paper deals with the Umbauzonen. Strictly speaking, this means with exclusion of changes taking place at the epiphysis. Clinically, the site of hardest wear presents a picture characteristic of painful periostosis. Radiologically it shows a bandlike translucency; the bone structure at the site involved is lost. Anatomically it means replacement of bone tissue by connective tissue, cartilage or osteoid tissue. Permanent fracture, overload, damage, and fatigue fracture, synonyms for the same pathologic picture, are included in the term, since fundamentally, in these conditions, the pathogenesis of Umbauzonen exists.

Umbauzonen are dealt with separately, according to whether they involve healthy or sick bone. The differentiation has proved valuable in consideration of the varying clinical course.

The clinical symptoms are variable. Callus formation, duration of healing, localization, and the influence of force in healthy and sick bone are discussed in the full version of this presention. Mention is made of those diseases in which Umbauzonen are observed, and those Umbauzonen which develop as a consequence of treatment are described.

A skeleton scheme, marking of the possible locations of Umbauzonen, is presented, together with pictures of Umbauzonen in a healthy and a diseased skeleton, Umbauzonen occurring as a consequence of treatment, and the surgical therapy of Umbauzonen. Prophylaxis and treatment are also discussed. Therapy is mainly conservative and consists of strict immobilization. In the presence of diseased bone, treatment of the fundamental illness is mandatory.

The treatment of osteoporosis with hormones, which exert an anabolic effect, is emphasized. In a few exceptional cases, surgical intervention is indicated.

Too little is known even yet of the nature of the Umbauzonen, the most common source of false diagnosis with regard to osteomyelitis and sarcoma.

Unnecessary and disastrous interventions can be prevented with better knowledge of the clinical picture of the Umbauzonen.

Thromboembolism: Prophylaxis with PH 203**

ERIC RAPPERT, M.D., F.I.C.S.

The danger associated with thromboembolism cannot be measured by laboratory methods. One can estimate it only from comprehensive statistics (Wenzl-Kuehlmayer, Rappert). Different prophylactic methods are available against thrombosis. Preoperative, operative and postoperative measures are used everywhere nowadays. Of the specific methods only the Dicoumarine derivatives and Panthesin are useful, according to present experience. The two are about equally valuable. The number of postoperative hemorrhages is increased fourfold by use of the anticoagulants; time-consuming laboratory controls are necessary, which makes these rather unsatisfactory. The use of PH 203 dispenses with laboratory controls; there is no tendency to hemorrhage; serious incidents have never been observed, and there is no known contraindication. Of about 3,400 patients, 2 surgical patients and 3 urologic patients had fatal embolisms (0.15 per cent). This is a result unsurpassed by any other method up to the time of this report.

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*Oberarzt, Orthopedic Clinic, Vienna

**Published in detail in Clinical Medicine

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

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Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

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6-8 rue de la Confédération
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Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

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Section II

the BULLETIN

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CONTENTS

Page

Twenty-Fourth Annual Congress, North American Federation, International College of Surgeons 5
Comments by the Founder: International Aspects of North American Federation Congress 7
Midsummer European Postgraduate Tour 11
Postgraduate Courses and Conferences 12
Professor John Macintyre 13
William James Moore, M.D., F.R.C.P.S. (Glasgow), F.I.C.S., Glasgow, Scotland
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From the Executive Director's Notebook 19

UNITED STATES SECTION

The President's Message 22
Alabama Surgical Section Annual Meeting 24
News Briefs 30
Journey Into Freedom 33
Joseph Anthony Malejka, M.D., New York City, New York

Woman's Auxiliary

The President's Message 36

SECTION NEWS

Greece 38
In Memoriam 39

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From the Executive Director's Notebook........ 19

UNITED STATES SECTION

The President's Message........ 22

Alabama Surgical Section Annual Meeting........ 24

News Briefs........ 30

Journey Into Freedom........ 33
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Woman's Auxiliary

The President's Message........ 36

SECTION NEWS

Greece........ 38

In Memoriam........ 39

GENÈVE 35

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CONTENTS

Page

Twenty-Fourth Annual Congress, North American Federation, International College of Surgeons.................................... 5
Comments by the Founder: International Aspects of North American Federation Congress.............................. 7
Midsummer European Postgraduate Tour.............................. 11
Postgraduate Courses and Conferences.............................. 12
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From the Executive Director's Notebook.............................. 19

UNITED STATES SECTION
- The President's Message.. 22
- Alabama Surgical Section Annual Meeting.............................. 24
- News Briefs 30
- Journey Into Freedom.. 33
  Joseph Anthony Malejka, M.D., New York City, New York
- Woman's Auxiliary
  - The President's Message.. 36

SECTION NEWS
- Greece 38

In Memoriam 39

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Midsummer European Postgraduate Tour 11
Postgraduate Courses and Conferences 12
Professor John Macintyre 13
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Announcement of Awards Offered by Section on Obstetrics and Gynecology and by Section on Ophthalmology and Oto-Rhino-Laryngology 18
From the Executive Director's Notebook 19

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The President's Message 22
Alabama Surgical Section Annual Meeting 24
News Briefs 30
Journey Into Freedom 33
Joseph Anthony Malejka, M.D., New York City, New York

Woman's Auxiliary

The President's Message 36

SECTION NEWS

Greece 38
In Memoriam 39

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CONTENTS

Page

Twenty-Fourth Annual Congress, North American Federation, International College of Surgeons 5
Comments by the Founder: International Aspects of North American Federation Congress 7
Midsummer European Postgraduate Tour 11
Postgraduate Courses and Conferences 12
Professor John Macintyre 13
William James Moore, M.D., F.R.C.P.S. (Glasgow), F.I.C.S., Glasgow, Scotland
International Surgeons' Hall of Fame: Visitors from Far and Near 17
Announcement of Awards Offered by Section on Obstetrics and Gynecology and by Section on Ophthalmology and Oto-Rhino-Laryngology 18
From the Executive Director's Notebook 19

United States Section

The President's Message 22
Alabama Surgical Section Annual Meeting 24
News Briefs 30
Journey Into Freedom 33
Joseph Anthony Malejka, M.D., New York City, New York

Woman's Auxiliary

The President's Message 36

Section News

Greece 38

In Memoriam 39

COLLÈGE INTERNATIONAL DE CHIRURGIENS

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Twenty-Fourth Annual Congress
North American Federation
International College of Surgeons

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The North American Federation Comprises

CUBA
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CONTENTS

Page

Twenty-Fourth Annual Congress, North American Federation, International College of Surgeons 5

Comments by the Founder: International Aspects of North American Federation Congress 7

Midsummer European Postgraduate Tour 11

Postgraduate Courses and Conferences 12

Professor John Macintyre 13
William James Moore, M.D., F.R.C.P.S. (Glasgow), F.I.C.S., Glasgow, Scotland

International Surgeons' Hall of Fame: Visitors from Far and Near 17

Announcement of Awards Offered by Section on Obstetrics and Gynecology and by Section on Ophthalmology and Oto-Rhino-Laryngology 18

From the Executive Director's Notebook 19

UNITED STATES SECTION
- The President's Message 22
- Alabama Surgical Section Annual Meeting 24
- News Briefs 30
- Journey Into Freedom 33
  Joseph Anthony Malejka, M.D., New York City, New York
- Woman's Auxiliary
  - The President's Message 36

SECTION NEWS
- Greece 38

In Memoriam 39

TWENTY-FOURTH ANNUAL CONGRESS
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THE UNITED STATES OF AMERICA, CANADA, THE UNITED STATES OF MEXICO, CUBA, HAITI, GUATEMALA, HONDURAS, EL SALVADOR, NICARAGUA, COSTA RICA AND PANAMA

September 13-17, 1959

Palmer House Chicago, Illinois

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Dr. Alexander Brunschwig, F.A.C.S., F.I.C.S. (Hon.), of New York City, vice-president of the United States Section, is the general chairman of the Congress.

Dr. Edward L. Compere, F.A.C.S., F.I.C.S. (Hon.), of Chicago, president of the United States Section, is the secretary of the North American Federation. Associated with him as presidents or representatives of the constituent national sections of the North American Federation are the following:

Dr. George J. Strean, F.R.C.C., F.I.C.S., of Canada
Dr. Raul Arturo Chavira, F.A.C.S., F.I.C.S. (Hon.), of Mexico
Dr. J. R. Nunez Portuondo, F.A.C.S., F.I.C.S., of Cuba
Dr. Antoni Leveque, F.I.C.S., of Haiti
Dr. Ricardo Aguilar Meza, F.A.C.S., F.I.C.S., of Guatemala
Dr. Jose R. Duron, F.I.C.S., of Honduras
Dr. Mariano Samayoa, F.I.C.S., of El Salvador
Dr. Humberto Alvarado, F.I.C.S., of Nicaragua
Dr. Oscar Pacheco Chaverri, F.I.C.S., of Costa Rica
Dr. Gustav Andreas Engler, F.I.C.S., of Panama

Dr. Henry W. Meyerding
F.A.C.S., F.I.C.S. (Hon.)

President
International College of Surgeons

These, together with the secretaries and

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of the
NORTH AMERICAN FEDERATION
INTERNATIONAL COLLEGE OF SURGEONS

September 13-17, 1959 Chicago, Illinois

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Honorary Chairman of the Congress

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Secretary
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Dr. Peter A. Rosi
F.A.C.S., F.I.C.S.

Chairman
General Program Committee

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Obstetric and Gynecologic Surgery
Ophthalmologic Surgery
Oto-Rhino-Laryngologic Surgery
Orthopedic Surgery
Plastic and Reconstructive Surgery
Surgery of Trauma and Rehabilitation
Urologic Surgery
Film Forum and Surgical Motion Pictures
Surgical Nurses' Program

The Social Program

The Woman's Auxiliary, too, is arranging for meetings and social occasions in conjunction with the Congress. Plans for the Convocation and the banquet are also maturing.

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The Congress

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write to
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INTERNATIONAL ASPECTS OF NORTH AMERICAN FEDERATION CONGRESS

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NORTH AMERICAN FEDERATION
(Canada, Mexico, U. S. and Central American Sections)
INTERNATIONAL COLLEGE OF SURGEONS

PALMER HOUSE—CHICAGO
Congress Headquarters

September 13-17, inc., 1959

For information regarding preliminary program and reservations, etc. address:

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APPLICATION FOR HOTEL RESERVATIONS

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation

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PALMER HOUSE — CHICAGO

Congress Headquarters

September 13, 14, 15, 16, 17, 1959

Note: The headquarters hotel is reserving a sufficiently large block of rooms for those who will be attending the Congress. However, early reservations are necessary to hold this block of rooms.

PALMER HOUSE

Single Rooms	Double Rooms	Twin Rooms	Parlor and 1 Bedroom
$8.00 and up	$15.00-$22.50	$16.00-$24.50	$40.00 and up (1 person)

Mail to: ROOM RESERVATIONS
THE PALMER HOUSE
CHICAGO 90, ILLINOIS

Please make the following reservation for the 24th Congress of the International College of Surgeons:

Single Room	Double Rooms	Twin Rooms	Parlor and 1 Bedroom
$ to $	$ to $	$ to $	$ to $

Arriving a.m. or p.m. Departing a.m. or p.m.

Please include the names of all persons who will occupy rooms requested

Confirm reservation to:

International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)
A World Federation of General Surgeons & Surgical Specialists, Inc.
"Instrument of the Free World"

OFFICE OF THE
INTERNATIONAL SECRETARY GENERAL
850 WEST IRVING PARK ROAD
CHICAGO 13, ILLINOIS

Dear Doctor:

We are preparing a Directory of the membership of the International College of Surgeons in the United States and the rest of the world. This will include also the Constitution and Bylaws of the College, information on qualifications for membership, a description of the activities of the College, as well as a full list of members, alphabetically and regionally arranged, with pertinent information about each member.

The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

We would appreciate your cooperation. Please return the attached subscription blank in the enclosed self-addressed envelope, and oblige

Yours sincerely,
PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
1516 Lake Shore Drive
CHICAGO 10, ILLINOIS
U. S. A.

Please enter my subscription for one volume (or more if desired) of the DIRECTORY OF THE INTERNATIONAL COLLEGE OF SURGEONS, for which I enclose my check for $5.50 per volume *pre-publication price.* Please send book to:

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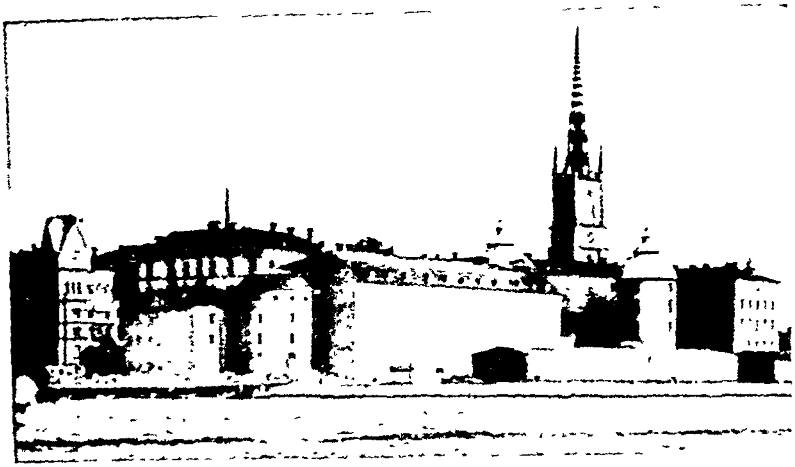

Scene in Stockholm, Sweden

Midsummer European Postgraduate Tour

The Netherlands, Denmark, Norway, Sweden, Finland, Russia, Austria, Germany and France

July 17 - August 27

ROSS T. McINTIRE, M.D., F.A.C.S. (Hon.) F.I.C.S. (Hon.)

TOUR COORDINATOR

This month I wish to call to the attention of the membership a real opportunity for a delightful experience that many of us will have in our tour of the northern European countries. Norway is but one of our stops. It is famous for the beauty of its landscape and is well known as the Land of the Midnight Sun. The fjord country presents scenery on a grand scale, and those of you who will join me on this tour will have ample time to see some of these great arms of the sea. Many are the wonders of Nature that can be explored in the four days we will spend there.

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From Stockholm, we will journey to Helsinki, where we will meet with the Finnish Chapter of the International College of Surgeons, which will be one of the highlights of our tour.

International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)

A World Federation of General Surgeons & Surgical Specialists, Inc.
"Instrument of the Free World"

OFFICE OF THE
INTERNATIONAL SECRETARY GENERAL
850 WEST IRVING PARK ROAD
CHICAGO 13, ILLINOIS

Dear Doctor:

We are preparing a Directory of the membership of the International College of Surgeons in the United States and the rest of the world. This will include also the Constitution and Bylaws of the College, information on qualifications for membership, a description of the activities of the College, as well as a full list of members, alphabetically and regionally arranged, with pertinent information about each member.

The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

We would appreciate your cooperation. Please return the attached subscription blank in the enclosed self-addressed envelope, and oblige

Yours sincerely,

PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
1516 Lake Shore Drive
CHICAGO 10, ILLINOIS
U. S. A.

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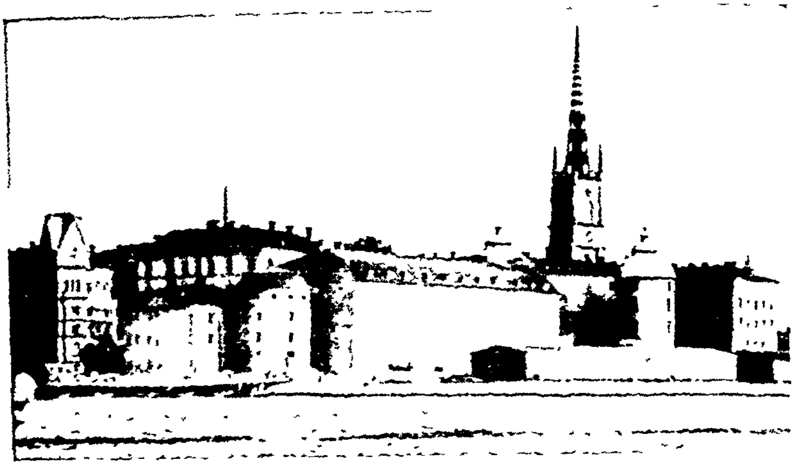

Scene in Stockholm, Sweden

Midsummer European Postgraduate Tour

The Netherlands, Denmark, Norway, Sweden, Finland, Russia, Austria, Germany and France

July 17 - August 27

ROSS T. McINTIRE, M.D., F.A.C.S. (Hon.) F.I.C.S. (Hon.)

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Postgraduate Courses and Conferences

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The American Medical Society of Vienna
and
The University of Vienna

Postgradute Courses in Surgical Science Provide Opportunities for Postgraduate Work in Various Fields of Surgery

For information write: Dr. M. Arthur Kline, F.I.C.S., Secretary, American Medical Society of Vienna, 11 Universitätsstrasse, Vienna, Austria.

SPAIN

BARCELONA

Hospital de la Santa Cruz y San Pablo
Surgical Service

Dr. Jose Solar-Roig, F.I.C.S.
DIRECTOR

ADVANCED COURSES IN SURGERY OF THE DIGESTIVE TRACT
(For Postgraduates)
Under the Auspices of the
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UNITED STATES

The United States Section

International College of Surgeons
announces its

ANNUAL POSTGRADUATE COURSE

August 3, 1959 November 2, 1959

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The program will include illustrated lectures, motion pictures, anatomy demonstrations, operative clinics and practice surgery by the participants on anesthetized dogs. Consideration will be given not only to surgical technic, surgical complications and management of the surgical patient, but also to an intensive review of the basic sciences in relation to clinical surgery. In addition to twenty hours of surgical anatomy on the cadaver, the program will include lectures and demonstrations on the following:

Gastric Surgery
Surgical Physiology
Use of Blood and Derivatives
Pediatric Surgery
Surgery of Large Bowel
Surgery of Small Bowel
Intestinal Obstruction
Anorectal Surgery
Surgery of Pancreas and Spleen
Vascular Surgery
Breast Surgery
Gallbladder Surgery
Thoracic Emergencies
Hand Injuries and Infections
Gynecologic Surgery
Surgery of Hernia
Abdominal Injuries
Surgery of Esophagus
Thyroid Surgery
Radioisotopes in Surgery

For further information write to either of the following:

International College of Surgeons
1516 Lake Shore Drive, Chicago 10, Illinois

Cook County Graduate School of Medicine
707 South Wood Street, Chicago 12, Illinois

Professor John Macintyre

M.B.C.M., F.R.F.S.E., F.R.F.P.S., K.St.J., D.L., J.P., LL.D.

1857-1928

WILLIAM JAMES MOORE, M.D., F.R.C.P.S. (Glasgow), F.I.C.S.

GLASGOW, SCOTLAND

John Macintyre was born in the east end of Glasgow on October 2, 1857. The family came from Argyllshire. His father was a journeyman tailor.

He was a delicate child and received most of his education from his parents. At ten years of age his health markedly improved and he then attended night school. His mother, to whose encouragement he doubtless largely owed much, was a relative of the African explorer, Dr. Livingstone, and in time Prof. Macintyre named his eldest son after him.

Varied Experience

On leaving school, John Macintyre entered a lawyer's office. He then became a bank clerk and later went to work in a grain store. During this time he attended night school and saved enough money to enter Glasgow University as a medical student, which he did in 1878. He was graduated four years later with commendation and medals in botany and anatomy.

From Ship's Surgeon to Pioneer in Surgical Specialty

He was first a ship's surgeon and made several trips to India. On returning, he settled in Glasgow and, after living in several houses, finally settled in 179 Bath Street, which house he occupied to the end of his days.

He received an appointment as assistant surgeon to Glasgow Royal Infirmary. Later he was appointed surgeon of the diseases in the nose, throat and ear. During this time he took postgraduate courses in London, Vienna, Berlin and Paris. He was the first recognized nose, throat and ear specialist in Scotland. He was also an assistant surgeon to the Locke Hospital and for a time was demonstrator of anatomy in St. Mungo's College.

Prof. John Macintyre, M.B.C.M., F.R.F.S.E., F.R.F.P.S., K.St.J., D.L., J.P., LL.D.
1857-1928

The First X-Ray Tube

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Meeting of the Wizards

Some time later, the famous Mr. Edison visted Glasgow, and his arrival was announced as that of the wizard of the x-rays. He at once went to Prof. Macintyre's house and while there saw, in the viewing box, a photograph of the skull which demonstrated the ossicles of the middle ear. After examining it, he said. "I am far behind the times." We have never heard of Edison's x-rays since.

About this time a well-known professor of divinity consulted a surgeon in London on account of abdominal pain. The surgeon gave a very serious diagnosis and the professor was very much upset. He came back to Glasgow and saw Prof. Macintyre, who examined him, took an abdominal picture, and told him he had a large stone in his right kidney but that no tumor was present. That stone was successfully removed by another Glasgow surgeon, and the patient made an excellent recovery. He lived for many years afterwards. On writing his biography he referred to Macintyre as "the wizard of the x-rays."

Thoracic Radiography

Shortly after that event, a youth of eighteen years was seriously troubled with a cough. He was seen by the professor of medicine, who was unable to make a diagnosis, and an x-ray examination was suggested. The professor said it would be useless, but the suggestion was carried out by Prof. Macintyre, who found a lesion in the middle lobe of the right lung. This, so far as we know, is the first radiograph of the lung.

At a later date Macintyre introduced stereoscopic photography and demonstrated a fracture of the skull which was seriously contested but which was ultimately found to be correct.

A short time later he radiographed a patient suspected of having chronic appendicitis. This he diagnosed and the condition was confirmed later by operation. Some little while later he diagnosed a carcinoma of the caecum.

Radiologic Diagnosis of Carcinoma of the Breast

In 1920 he radiologically examined a mammary gland and diagnosed a carcinoma. This was proved histologically after the operation, and so far as is known is the first case of radiological diagnosis of carcinoma of the gland.

During his work at the Glasgow Royal Infirmary, Prof. Macintyre trained Dr. Riddell, who ultimately became radiologist to Glasgow Royal Infirmary and at a later date was appointed radiologist to Glasgow Western Infirmary and was the first lecturer in radiology at Glasgow University.

Friendship with Sir Morell McKenzie

During the latter part of the last century, Sir Morell McKenzie was requested by the late Queen Victoria to see her son-in-law, the late German Emperor Edward III, who suffered from a throat condition. Unfortunately, his illness proved fatal and he reigned for only ninety days. Sir Morell and Professor Macintyre were friendly, and when the former died, in 1892, Macintyre was invited to go to London and succeed him, but he declined. However, he secured some of his consulting room furniture and used, in his own consulting room, three chairs which had been used by McKenzie. As is well known, McKenzie was very much criticized relative to his treatment of the German Emperor. These criticisms were bitterly resented and Macintyre supported him to the full on every occasion.

Early Use of Radium

Madame Curié discovered radium. Shortly thereafter Macintyre received a specimen and proceeded to treat patients with it. He soon found the demand for the treatment was getting beyond him and he called a meeting in February 1913 at which many distinguished gentlemen were present, including Lord Blythswood, Sir John Stirling Maxwell and Sir George Beatson. As a result, the Radium Institute was founded and proved a great success.

Host to Royal Family

The old Glasgow Royal Infirmary was being rebuilt at this time and the electrical pavilion was organized and named King George V Pavilion. It was opened by the King himself in July 1914. The King was shown around by Prof. Macintyre, the Queen by Mrs. Macintyre, and the Princess Royal by Dr. Riddell.

Prof. Macintyre had been at the Anderson College Medical School for some years and in 1909 was unanimously appointed dean. After being dean for some little time he appointed the author a professor of surgery, that chair being vacant, and the occupant held it until he was appointed to the chair of surgery at Glasgow University in 1924 on the death of Sir Wm. Macewen. The school had been called the Anderson College Medical School, but the name was changed to the Anderson College of Medicine and so it remains to this present day. Within the past year it has been taken over by Glasgow University, as all extramural teaching has ceased.

During his term of office as dean, Prof. Macintyre carried out many improvements and extended the scope of the college to an immeasurable degree, he having founded the chairs of dental surgery, metallurgy, pathology and bacteriology.

Daily Round of Work

His usual day's routine was such that he commenced work at nine in the morning, continuing, with a short interval for lunch, until two o'clock. He then visited the hospital, where he paid a ward visit and operated. This kept him, as a rule, until five. On returning home, he again saw patients between the hours of five and six to accommodate people who could not come during the day. During the session, he lectured usually three days a week from three to four in the afternoon. He had many committee meetings, which mostly were held between the hours of two and three in the afternoon. Meetings associated with the college were held in the evening. He seldom missed any of them.

His evenings were largely spent experimenting and writing. He held dinner parties on various occasions which were most enjoyable entertainments. On these occasions he was assisted by his wife, who had a charming personality.

Family Life and Social Contacts

His family consisted of two sons and one daughter. One son died in infancy; the other followed in his father's footsteps. His studies were interrupted by the First World War. During his service he was promoted to be adjutant of the Queen's Own Cameron Highlands. While on active service he went over the top seventeen times but was not wounded. At the termination of his service he returned to Glasgow and graduated M.B.Ch.B. in 1921.

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Interest in Personalities

Macintyre was very much interested in phonograms and recorded many personalities for the first time. Among them were Lord Lister, Lord Blythswood and Paderewski. He was very popular with the star artists and shortly before Pachman's last appearance in Glasgow, a notice appeared in the *Glasgow Evening News* — "Would you believe it? Truth is stranger than fiction. Pachman has not yet seen Professor Macintyre."

Prof. Macintyre was instrumental in the foundation and development of the Elder Hospital, which was founded by the late Mrs. Elder, widow of the founder of the Fairfield Shipbuilding Company Limited. He was also instrumental in directing large sums of money for the endowment of beds and wards in Glasgow Royal Infirmary.

Honors from Near and Far

In recognition of his services he was given the Knight Commandership of the Order of St. John of Jerusalem in 1915. The town council bestowed a doctor of laws degree on him and also made him a justice of the peace, and Glasgow University conferred upon him an L.L.D.

Dr. Macintyre was a member of many international societies. He was the first president of the newly founded Roentgenological Society. He was a Fellow of the Royal Society of Edinburgh, president of the British Laryngological and Rhinological Societies, a corresponding Fellow of the American and French Laryngological Societies, president of the Institute of Electrical Engineers and president of the West of Scotland Branch of the British Medical Association.

He was, in addition to his other qualifications, an M.B.C.M., F.R.F.P.S., F.R.S.E. He was also associated with the foundation of the Royal Naval Volunteer Reserve, and was one of the founders of the Garscube Cottage Hospital for soldiers wounded in the South African War.

All the Virtues of the Scotch

Personally, he was a typical Scotsman, difficult to know, but once you knew him he was your friend for life. He did not drink, but he smoked cigars continuously. He was an indefatigable worker and humane in all his actions. As an operator he was most dexterous. He never troubled about fees and on many occasions treated deserving cases without money or price. He was also very influential and was instrumental in helping to found many charitable institutions in the city.

He was always a strong supporter of the junior man who showed any interest in his work. During his lifetime he published approximately one hundred and eleven papers and articles.

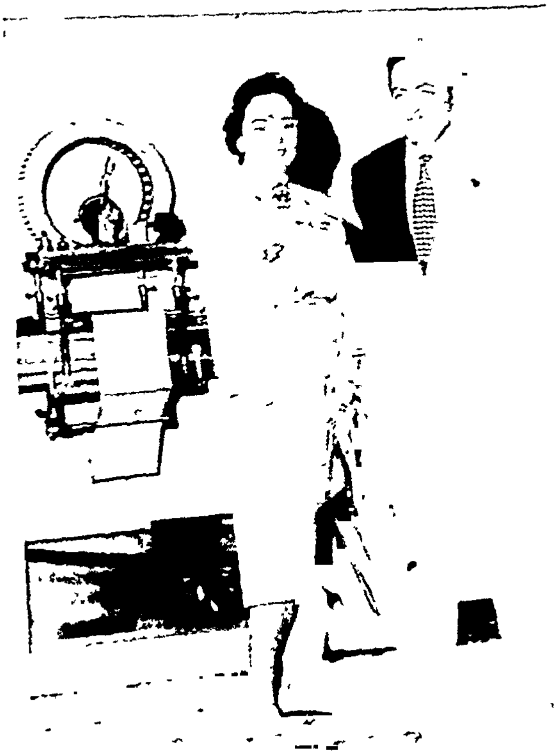
In 1928 he fell into ill-health and, having fulfilled to the utmost a life of full devotion to his fellow man, he finally passed into that unknown world which rules all round the sea. He died on October 29, 1928.

◆

The Editorial Office of the Journal of the International College of Surgeons will appreciate receiving the names of our members who wish to aid in abstracting the foreign literature. Those who are interested, kindly communicate with Dr. Max Thorek, Editor-in-Chief, Journal of the International College of Surgeons, 850 West Irving Park Road, c/o The American Hospital of Chicago, Chicago 13, Illinois, U.S.A.

International Surgeons' Hall of Fame

VISITORS FROM FAR AND NEAR



Above: Dr. and Mrs. Ennio Botelho Perrone of Cidade de Presidente Prudente, Estado de São Paulo, Brazil, in the roentgenologic exhibit room

Above at right: Dr. and Mrs. Alan Grant of Sidney, Australia, before a mural depicting a reception at the Sorbonne in honor of Joseph Lister, who is being presented by Louis Pasteur. Dr. Grant is an outstanding Fellow of the International College of Surgeons and its able representative in Australia

At right: Dr. and Mrs. Mario Gonzalez-Ulloa of Mexico City, Mexico, leaving Hall of Fame. The number 1524 Lake Shore Drive in Chicago is a famous landmark which visitors to the city look for

Announcement of Awards

Offered by the

International College of Surgeons

SECTION ON OBSTETRICS AND GYNECOLOGY

Manuscript Awards

The Section on Obstetrics and Gynecology of the International College of Surgeons is pleased to announce its second annual competition for two awards to be given the authors of manuscripts selected by the Prize Committee of the Section. The first award will be $500 and the second $300.

Fellows of the International College of Surgeons are not eligible. Contestants must be (a) interns, residents, or graduate students in the field of obstetrics and gynecology, or (b) engaged in the practice or teaching of obstetrics and gynecology.

The two successful contestants will be asked to appear in person to participate in the regular scientific program of the Section on Obstetrics and Gynecology at the annual Congress of the North American Federation of the International College of Surgeons in 1959. Personal expenses incurred by such participation must be borne by the winners. The awards will be made in cash by the Chairman of the Section during the course of the 1959 Congress.

An original and three copies of each manuscript (carbon, photostatic, mimeographic or other) and illustrations must be submitted on or before June 1, 1959 to

Dr. Harvey A. Gollin
Secretary, Prize Committee
55 East Washington Street
Chicago 2, Illinois

SECTION ON OPHTHALMOLOGY AND OTO-RHINO-LARYNGOLOGY

Research Grant

The Section on Ophthalmology and Oto-Rhino-Laryngology of the International College of Surgeons has established a Research Grant. This Section is especially interested in the following forms of scientific inquiry.

Furstenberg Plan

A young specialist, a resident or a medical student may be given an opportunity to explore scientifically under supervision.

Leopold Plan

An ophthalmologic or oto-rhino-laryngologic summer fellowship may be instituted for a research project.

Scheie Plan

Junior and Senior medical students of superior ability may be encouraged to enter the special fields of ophthalmology and oto-rhino-laryngology.

Participation Plan

A grant may be given in cooperation with other sponsors in order to help make possible major research projects.

Please apply, giving details and ideas, to

Paul C. Craig, M.D., Chairman
Committee on Scientific Work
232 N. Fifth St., Reading Pa.

From the Executive Director's Notebook

OREGON REVISITED AND THE STUDENT EXCHANGE PROGRAM AUGMENTED

Dr. Ross T. McIntire

My visit to Portland, Oregon, in early April allowed me to accomplish a number of things, the most important of which was my visit with Dr. Ben Wade, the regent for the state of Oregon. Dr. Wade is one of the most successful surgeons of the Pacific Northwest and has practiced in Portland for more than forty years.

It was my pleasure to have breakfast with Dr. and Mrs. Wade in their charming home, which is situated in a beautiful wooded area about eight miles from the center of Portland. The landscaping has been so well done that little of the natural surroundings has been disturbed. There is a broad expanse of lawn from the house to a small lake surrounded by giant firs, spruce and poplars, as well as by other trees native to Oregon. The woods were full of wild flowers, and to an Oregonian there is nothing more beautiful than springtime in its natural habitat.

Dr. Wade Evolving Plan for Young Surgeons

Following this, we returned to the city, where a luncheon was held at the Aero Club. The guests included many of our officers and outstanding surgeons of Portland. Discussion brought out the many features of the program that we have planned for the coming year for the International College of Surgeons. The opportunity for visits to the various nations of the world was described. People in the Pacific Northwest are quite conscious of the need to know more about other countries of the world, especially of the Far East. Dr. Wade discussed at length his plans for interesting young surgeons in the College and asked for comment, which proved to be most interesting. In a very short time we will distribute the plans and information that Dr. Wade is developing. We believe it will do much to interest young surgeons in international needs in the field of health.

Foreign Students and International Relations

On my return to Chicago, it was with great pleasure that I appeared as the speaker for the monthly meeting of the Executive Student Council and the International Association of the University of Illinois. The subject assigned to me was *The Role of Professional Students in International Relations.*

In the discussion, I pointed out the experience that we are now gaining in the examining of foreign medical students for internships and residencies in the schools of our country. For example, in February of 1959, 1,278 students took the examination in medical centers in this country; 616, or 58.2 per cent passed, and 341 made qualifying grades which gave them a temporary permit to continue for another year in our schools. Those taking the examination in fifty centers located in other countries of the world found only 31.7 per cent making a passing grade.

Language Difficulties and Other Problems

The language difficulty seems to be a major factor, as the examination question-are set up on a uniform basis, supervised by our National Board of Medical Examiners. Another important point brought out was that when foreign graduates return to their homelands after study in the United States there is a great tendency to refuse acceptance of the work done in our schools and hospitals. This would seem to call for consideration of the entire exchange plan of medical students by the United Nations, probably through the World Health Organization.

In the question and answer period, it was brought out that the student himself believes he has a great opportunity to be an ambassador of good will. The International College of Surgeons can play a very important, a very vital role, in improving understanding in the exchange program.

Ross T. McIntire

International College of Surgeons will see it all
Europe and Russia in the summer
The whole wide world in fall

INTERNATIONAL COLLEGE OF SURGEONS

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THE UNITED STATES SECTION

International College of Surgeons

announces its

ANNUAL POSTGRADUATE COURSE

August 3, 1959 November 2, 1959

The United States Section of the International College of Surgeons will again offer its Annual Postgraduate Course, in cooperation with the Cook County Graduate School of Medicine. It will be a two-week intensive review course in General Surgery presented at the Graduate School, and in the wards and operating rooms of Cook County Hospital. Because the course has been oversubscribed in previous years, it will be offered twice in 1959.

The program will be offered under the supervision of the Hospital's Surgical Staff. It will include illustrated lectures, motion pictures, anatomy demonstrations, operative clinics and practice surgery by the participants on anesthetized dogs. Consideration will be given not only to surgical technic, surgical complications and management of the surgical patient, but also to an intensive review of the basic sciences in relation to clinical surgery. In addition to twenty hours of surgical anatomy on the cadaver, the program will include lectures and demonstrations on the following:

- Gastric Surgery
- Surgical Physiology
- Use of Blood and Derivatives
- Pediatric Surgery
- Surgery of Large Bowel
- Surgery of Small Bowel
- Intestinal Obstruction
- Anorectal Surgery
- Surgery of Pancreas and Spleen
- Vascular Surgery
- Breast Surgery
- Gallbladder Surgery
- Thoracic Emergencies
- Hand Injuries and Infections
- Gynecologic Surgery
- Surgery of Hernia
- Abdominal Injuries
- Surgery of Esophagus
- Thyroid Surgery
- Radioisotopes in Surgery

Members of the International College of Surgeons are urged to take advantage of this exceptional opportunity to continue their training in Surgery. Associate Members and Junior Members who attend will receive appropriate consideration and credit when applying for advancement.

Requests for application or further information may be addressed to either of the following:

International College of Surgeons
1516 Lake Shore Drive
Chicago 10, Illinois

Cook County Graduate School of Medicine
707 South Wood Street
Chicago 12, Illinois

United States Section

THE PRESIDENT'S MESSAGE

California, Texas, Alabama and New York!

Dr. Edward L. Compere

Since writing the President's Message for the last issue of the *Bulletin* of the International College of Surgeons, a message which I hope that you have all read, I have been to California to visit the regents, vice-regents and credentials committee members for Southern California. My wife and I nearly always go by plane to save time, but for this trip to California we thought we needed a little rest, and so went out on the Santa Fe Chief. We disembarked at San Bernardino and were met there by friends and were driven to Palm Springs. After five very restful days, which included some tennis and golf, we picked up a U-Drive car and proceeded on toward Los Angeles. We stopped over night en route at the Walt Disney Motel, which is an impressive structure with modern shops, a wonderful dining room and very comfortable bedrooms. It is located just across the street from Disneyland and Virginia took advantage of the opportunity of visiting that interesting playground, while I spent a good part of the day in a remarkable hospital known as the *Rancho Los Amigos.* To this hospital, which is operated by the County of Los Angeles, are sent patients who are considered to be so badly paralyzed from poliomyelitis, or crippled from other diseases, that there is very little hope that they can ever be rehabilitated. **Dr. Vernon Nickel** and his assistant and associate, **Dr. Jacquelin Perry,** are doing most remarkable surgery on these patients, and their results are certainly impressive. They have rehabilitated, to a considerable extent, patients with respiratory paralysis, as well as paralysis of from one to all four extremities, so that they are able to sit up, some of them to walk, and nearly all of them to feed themselves.

In Los Angeles I had a very satisfactory and pleasant visit with the regent, **Dr. Joseph de Los Reyes,** and one of the vice-regents, **Dr. "Nat" Irving Wills,** who is one of our most remarkable members. In his younger days, "Nat" was an actor and he knows most of the actors and actresses in Hollywood, and they are very proud to be among his friends. He has been, for many years, an eminent surgeon on the staff of the Santa Barbara Clinic. Also at our little conference was **Dr. Ross Parks,** who has been secretary of the Southern California Chapter of the International College of Surgeons for a number of years.

Monday evening, March 16, 1959, the officers, regents, vice-regents, credentials committee members and a few other members of the Southern California Chapter had their annual banquet and business meeting. The attendance was excellent. Most of the doctors brought their wives and it was a very pleasant occasion indeed. Just prior to the dinner, I met with the regent, vice-regents and members of the credentials committee and we discussed various problems of the College, and I answered questions to the best of my ability. I believe that we were all enlightened and all came away from that meeting feeling very good about the future of the International College of Surgeons.

More than a year ago, I accepted an invitation to give several talks at a combined meeting of the Texas Medical Association, the Texas Orthopaedic Association, and the Texas Association of General Practice in San Antonio, Texas. I am, also, to speak at a meeting of the Galveston-Beaumont-Houston Orthopaedic Society in the city of Houston, just before the San Antonio meetings start. This trip will give me an opportunity of visiting, again, with our dynamic Texas regent, **Dr. Herbert Hipps** of Waco, Texas, and with the vice-regents and members of the Texas credentials committee. I believe that Herbert Hipps has brought in more new members, almost all of them Board certified and many of them members of the American College of Surgeons, during this past twelve months than has any other regent, including our beloved **Horace E. Ayers**, who led the list of regents from the standpoint of new members the year before.

A conflict in my schedule, due to having accepted the invitation to be the visiting chief of surgery for one week at the Atlantic City Hospital before the dates for the Alabama Surgical Meeting were scheduled, will make it impossible for me to be in Alabama at that time. I regret this greatly, because they do have a remarkable program and I should love to be there to have fellowship with the Alabama members of the College, to meet **Senators Hill** and **Sparkman**, and to hear **Dr. Wernher Von Braun** talk about interplanetary rockets. I hope that many of you will take time to attend this meeting.

We have never had a scientific program that we needed to be ashamed of. However, there have been many meetings where the attendance has not been what it should be for such a good program. There is no way in which you can show your interest in, and loyalty to, the International College of Surgeons better than by going to the meetings in your region and to the annual meetings, such as the North American Federation Congress of the International College to be held in Chicago in September, and by not only registering but faithfully coming to all of the sessions.

I am planning to attend the New York State Surgical Section Meeting at Kiamesha Lake May 28 to 31, 1959. Virginia and I were there last year at the Concord Hotel and had a very fine time. We are really looking forward to being back at the Concord, and we intend to take full and active part in all of the scientific and social programs. I hope that many of the members of the International College of Surgeons who live in the New England States and other states adjacent to New York will travel to Kiamesha and help us to make this a truly memorable and worthwhile meeting. I shall hope to see you there.

Edward L. Compere

INTERNATIONAL COLLEGE OF SURGEONS
GROUP MALPRACTICE INSURANCE PLAN

$200,000/$600,000 Limits of Liability are now available to members covered under the ICS Group Malpractice Insurance Plan.

Please write to John L. Krause, Administrator, 1576 Sherman Avenue, Evanston, Illinois, for rates and further details regarding the Plan.

United States Section

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Edward L. Compere

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Alabama Surgical Section

INTERNATIONAL COLLEGE OF SURGEONS

ANNUAL MEETING

Russel Erskine Hotel Huntsville, Alabama

May 21-22, 1959

Dr. Paul W. Shannon

Dr. Edwin V. Caldwell

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G. L. Baker, M.D., Huntsville

Program

THURSDAY, MAY 21, 1959

Morning

Call to Order

E. V. Caldwell, M.D., F.A.C.S., F.I.C.S., President, Alabama Section, International College of Surgeons; Fellow, S. E. Surgical Congress; Chairman, Alabama State Board of Health, Huntsville, Alabama

Invocation

The Reverend George F. Hart, Pastor, Saint Marks Lutheran Church, Huntsville, Alabama

Address

R. B. Searcy, Mayor, Huntsville, Alabama

Address

Fred W. Smith, M.D., F.A.C.S., D.A.B., Instructor, Department of Surgery, Medical College of Alabama; Fellow, S. E. Surgical Congress; President, Madison County Medical Society, Huntsville, Alabama

SCIENTIFIC SESSION

Presiding

J. O. Morgan, M.D., F.A.C.S., F.I.C.S., D.A.B., Past President, S. E. Surgical Congress, Gadsden, Alabama

Use of Plastics in Mammaplastry

Chester W. Trowbridge, M.D., F.A.C.S., F.I.C.S., Assistant Secretary and Treasurer, International College of Surgeons, Oak Park, Illinois

Management of Acute Colon Obstruction

Claude J. Hunt, M.D., F.A.C.S., F.I.C.S., D.A.B., Past President, American Goiter Society; Former Associate in Surgery, University of Kansas Medical School, Kansas City, Missouri

Eye Diseases Diagnosed by Inspection

Joe M. Dixon, M.D., D.A.B., Instructor in Ophthalmology, Medical College of Alabama, Birmingham, Alabama

Cancer of the Lung

Charles J. Donald, M.D., F.A.C.S., Associate Professor of Chest Surgery, Medical College of Alabama, Birmingham, Alabama

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

Tribute to Three Fellow Officers of the Auxiliary

Mrs. Earl Ingram Carr

It is with complete pleasure that I am approaching the article for this month's *Bulletin*. The reason for this? Three members of the Auxiliary Board are being presented to you — three members who have worked assiduously from the founding of this organization. They have worked with practicality, diplomacy and devotion, attacking each task and each problem with skill and authority.

Mrs. Jerome Moses, the niece of Dr. and Mrs. Max Thorek, is the financial secretary and the chairman of the Hall of Fame committee of the Auxiliary. Jeanette Moses is a true Chicagoan. She was born there, attended college there, married her husband there when he was a sophomore at Loyola Medical School. He is now an eminent member of the Board of the International College of Surgeons. And they have a son following his father in medicine at Loyola as a sophomore in premedical school and a daughter who is in high school. Mrs. Moses' conception of her duty to our Auxiliary is all encompassing. She always has accepted a request to handle any problem, however large, however small. She does this with dispatch and aplomb, as I am sure she conducts her activities in the American Cancer Society, in the Chicago Medical School Faculty Wives' Organization, in the Auxiliary of the Stritch School of Medicine, *et cetera.*

In **Mrs. Clement Martin,** whose husband is the treasurer of the International College of Surgeons, our Board has a dignified, devoted, diplomatic member. She is gifted in the literary field, having had poems, short stories and articles published, and her play *Drafted* produced. Mrs. Martin attended Duchesne College and Northwestern University and, in addition, two schools of music. She has been the president of numerous groups and organizations, but says she is "proudest of my connection with the Woman's Auxiliary to the International College of Surgeons for work done for humanity." Is it surprising that she is most outstanding as corresponding secretary and in her numerous and varied further activities in our behalf? Dr. and Mrs. Martin have a son firmly and successfully established as a physician.

Mrs. Louis L. Plzak, our effective treasurer, is the wife of another surgeon prominent in the affairs of the International College of Surgeons. Janice Plzak is a woman of science and research, having received a Ph.G., and a B.S. from the University of Illinois. Before her marriage Mrs. Plzak was chief pharmacist at West

Mrs. Jerome Moses

Mrs. Clement Martin

Mrs. Louis L. Plzak

Suburban Hospital and currently is doing research in radiation as a graduate student at the University of Chicago and at the United States Air Force Radiation Laboratory. In addition to this she is the author of a number of scientific papers and is preparing a thesis for her master's degree. All this and six fine children — the eldest, Louis, Jr., now interning in Boston, two daughters who are second and third year medical students, and a son George entering medicine in the fall! The two youngest are in elementary school — and who can fathom what they may choose as careers — Space?

These three wonderful women are representative of the membership of our Board. The diversity of their interests is apparent, but all are devoted to the worthwhile cause of international cooperation as demonstrated by the International College of Surgeons. *Ruth Smith Carr*

◆

I am interested in furthering the program of the Auxiliary to the International College of Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

NAME: ....

ADDRESS: ....

Make check payable to The Woman's Auxiliary, United States Section, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Section News

GREECE

Meeting to Present Series of Round-Table Discussions

The Greek Section of the International College of Surgeons is scheduling a series of round-table discussions for its meeting, May 29-30, in Athens.

All round-table presentations will be followed by general discussion.

Prof. Dr. N. Louros is president; **Prof. J. Charamis**, vice-president, and **Prof. N. Christeas**, general secretary, of the Greek Section of the International College of Surgeons.

The program is as follows:

FRIDAY, MAY 29

Hemorrhage of the Stomach
Moderator
PROF. N. CHRISTEAS
Participants
PROF. YANNACOPOULOS
PROF. ZEVGOLATIS
PROF. ZERVOYANNIS
PROF. CHRYSOSPATHIS
PROF. MEGALOICONOMOU

Slipped Disc
Moderator
PROF. GAROFALIDIS
Participants
PROF. YANNACOPOULOS
PROF. HADJIGEORGIOU
PROF. CANVISSI
PROF. ZAVERDINOS

Injuries of the Head
Moderator
PROF. TOUL
Participants
PROF. J. CHARAMIS
PROF. CHRYSICOS
PROF. YANNACOPOULOS
PROF. PATRIKIOS
PROF. ICONOMOS

SATURDAY, MAY 30

Repeated Cesarean Section
Diagnosis and Surgical Treatment of Sterility
Urologic Injuries of the Female
Moderator
PROF. N. LOUROS
Participants
PROF. CAIRIS
PROF. ANTONOPOULOS
PROF. KYRIAKIS
PROF. PAPADIMITRIOU
PROF. YANNACOPOULOS
PROF. VITALIS
PROF. COUTIFARIS
PROF. KASKARELIS
PROF. PAVLATOU
PROF. PAPATHÉODOROU
DR. COUTIFARIS
DR. NAOUMIDES

Stenosis of the Esophagus
Moderator
PROF. ALIVIZATOS
Participants
PROF. YANNACOPOULOS
DR. AVLAMIS
DR. LEKOU

Heart and Lung Surgery
Moderator
PROF. ALIVIZATOS
Participants
PROF. ECONOMOS
PROF. SCOUTELIS
PROF. FERETIS
PROF. SARRIS
DR. LAZARIDES
DR. ROMANOS

In Memoriam

DONALD TAYLOR ATKINSON

M.D., Sc.D., LL.D., F.A.C.S., F.I.C.S.

1874-1959

Dr. Donald Taylor Atkinson
Sc.D., LLD., F.A.C.S., F.I.C.S.

Dr. Donald T. Atkinson, Sc.D., LL.D., F.A.C.S., F.I.C.S., of San Antonio, Texas, died on Friday, March 20, 1959.

He was born in Shemogue, New Brunswick, Canada, May 31, 1874, the son of Joseph Silliker and Mary Grant Atkinson.

He was graduated M.D. by the Hospital College of Medicine, Louisville, Kentucky, in 1902. He studied abroad at the Allgemeines Krankenhaus in Vienna and at the Royal London Hospital in London, England, and received the honorary degrees of Sc.D. (Center College, Danville, Kentucky) and LL.D. (Huron, South Dakota).

Dr. Atkinson became a naturalized United States citizen in 1916. He began his practice of medicine in San Antonio, Texas, in 1902.

He was a member of the staff of Nix Hospital, Santa Rosa Infirmary and the Medical and Surgical Hospital, all of San Antonio. He was an associate editor of the *Eye, Ear, Nose and Throat Journal* and for some years served as editor of the ophthalmic department of the *Texas Medical News*. He received the Patronis Medal Award from the University of Florence, Italy, in 1951.

In addition to membership in local, regional and national medical, surgical and ophthalmologic organizations, Dr. Atkinson was a member of the Royal Academy of Medicine (Ireland) and the National Surgical Society of Italy.

He was a man of many interests. He wrote not only on the diseases and surgical treatment of the eye, but on medical and surgical history and a variety of other subjects which appealed to his many-sided personality. He illustrated his technical books himself, collaborated with others and saw reproductions of his illustrations included in medical books. He originated a number of medico-surgical instruments.

Dr. Atkinson was a member of the advisory board of the International College of Surgeons' School of Surgical History, and was vitally interested in the International Surgeons' Hall of Fame.

In all these activities, as well as in his professional field of surgery and ophthalmology, he received wide recognition and was the recipient of numerous honors.

He had a long life, full of activity and achievement, joyousness and generosity.

The officers and the members of the Board of Governors of the International College of Surgeons extend to Mrs. Atkinson their most sincere sympathy upon the loss of her distinguished husband.

In Memoriam

TADASU ITOH
M.D., F.I.C.S.
1901-1959

Dr. Tadasu Itoh, F.I.C.S.

We regret to announce the recent death of Dr. Tadasu Itoh, F.I.C.S., director of the Itoh Surgical Hospital in Tokyo, Japan.

Dr. Itoh was born in Hamamatsu, October 19, 1901. He was graduated M.D., from the Manchurian Medical College in 1925, and remained there for six additional years to serve as lecturer and continue his study and research in the department of pathology.

From 1931 to 1937 Dr. Itoh was associated with the Noguchi Hospital in Beppu, Ohita, in the department of general surgery.

Since 1937 until the time of his death, Dr. Itoh was the director of the Itoh Hospital in Tokyo, in charge of both general and thyroid surgery. But he was particularly interested in and devoted to research in surgery of the thyroid gland. He published, both in German and in Japanese, articles on the results of his research and on the technic of thyroid surgery.

Dr. Itoh's untimely death is greatly mourned. The officers and the Governors of the International College of Surgeons respectfully offer their condolences to Dr. Itoh's family and to his associates.

◆

WOMAN'S AUXILIARY MEMORIAL FUND

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Indwelling Common Duct Tubes

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"THERE are two sorts of ruins, one is the work of time, the other of men" *(Chateaubriand)*. I propose to deal exclusively with the latter.

My interest in this research was stimulated by two separate cases of similar type:

CASE 1.—Simple exploration of the common duct was performed, with cholecystectomy. Simple soft rubber catheter drainage of the duct was employed, with negative results, followed by a permanent biliary fistula of eight months' duration. The patient was referred to me at this stage, and at re-exploration there was no common duct left whatever except that portion which is embedded within the head of the pancreas and the area of the bifurcation of the hepatic ducts in the hilus of the liver. A defunctionalized loop of jejunum was used to construct a new duct.

CASE 2.—*I performed simple exploration* of the common duct with saline lavage. No calculi were detected. Simple closure of the duct was performed with five fine sutures of No. 0000 chromic catgut. The gallbladder fossa was drained. There followed a permanent biliary fistula of four months' duration. At reoperation all traces of the common duct had vanished except a stump embedded in the hilus of the liver and the lower end or *intrapancreatic* portion. Again a new duct had to be constructed *from a defunctionalized jejunal loop.*

As Clement the Alexandrian has so well said, "The beginning of truth is to wonder at things." I began to wonder: By what process had these ducts so completely disappeared, and if totality was apparently so easy to obtain, must there not be reactions of less severity in which colliquative necrosis accounted for only partial destruction of the duct with resultant cicatrix and stricture?

Total colliquative necrosis of the common duct could occur only as a result of serious interference with its blood supply. Early in this research it became evident that standard textbooks of anatomy made only the most casual reference to the blood supply of the common duct and none at all to the intimacy of architecture of its vascularization.

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The main blood supply of the common duct is an ascending branch of the supraduodenal artery of Wilkie,[1] as was recently confirmed by Michels[2] of Philadelphia, whose assistance I have found most helpful. The supraduodenal artery is well known for another reason, as a leish of vessels is given off from it to the anterior surface of the duodenum and downward traction of the duodenum, obliterating the terminals of this vessel, created what came to be known as, "the white spot of Mayo," and was thought to be an etiologic factor in duodenal ulcer. An occasional variant is that the artery to the common duct may come off the superior pancreaticoduodenal.

The supraduodenal artery of Wilkie gives off a very constant branch to the lateral side of the lower end of the exposed portion of the common bile duct. This vessel courses upward on the anterolateral surface of the duct and anastomoses with a descending artery, which may originate from the right or the left hepatic artery but most commonly originates from the cystic artery.

The anastomotic plateau or confluence of these two vessels is situated just below the entrance of the cystic into the common duct, almost exactly at the spot where the common duct is incised surgically for exploratory purposes. The constancy of this vessel has been repeatedly confirmed by specimens injected with colored liquid Latex and by extensive dissections. As a result of this investigation, certain definite facts have been established.

1. If the ascending branch of Wilkie's supraduodenal artery to the common duct is large, it usually meets with a descending branch that is very small; although the reverse is occasionally true, almost never have I observed both ascending and descending branches to the duct to be of anything like equal size.

2. The ascending branch from the artery of Wilkie may be, indeed, the only artery of supply to the entire extrahepatic common duct, and if placed a little more anteriorly than usual it becomes subject to surgical injury, with what may be disastrous results.

3. The extremities of the common duct, the intrahilar and the intrapancreatic portions of the common duct, possess such a wealth of interanastomosing vascular channels that both ends must be considered well-nigh indestructible as a result of any surgical vascular interference from which the duct is liable to suffer.

4. The common duct is a parchment-like structure containing little or no muscle except at its lower end, where one encounters the muscular mechanism of the ampulla of Vater and the sphincter of Oddi, and the vessels covering its surface penetrate the duct much like the pile of a carpet. If the surface of the duct be stripped in effecting exposure, frequently one can see, on the surface of the exposed duct, minute punctate bleeding points such as are seen on the surface of dense scar tissue that has been severed. Almost any intramural anastomosis within the duct and its punctate type of supply can easily lead to segmental necrosis of stripped areas if the stripping has been needlessly extensive. This punctate type of surface vascularization of the duct may be likened to the feet of a millipede walking on its surface.

Lessons to be drawn from a knowledge of the intimacy of the blood supply of the common duct are:

1. Postoperative necrosis of ducts is traumatic, leading to devascularization, local or total, and factors other than trau-

matic cannot be reasonably substantiated.

2. If the ascending vessel of supply from Wilkie's supraduodenal artery is larger than its opposite number, the descending artery is likely to be small, and they are rarely of equal size.

3. The danger of stripping the duct surface for purposes of visualization is emphasized. Interruption of the feet of the millipede may result in localized segmental necrosis of the parchment-like duct, leading to postoperative duct rupture, fistula and failure of many anastomotic procedures.

4. Ligation of a bleeder on the surface of the duct may lead to destruction of the whole duct or, to a lesser extent, cause segmental necrosis. No visible vessel on the surface of a duct should be disturbed. Opening on the common duct should deliberately and visually dodge the visible vascular supply. "Scrubbing" the exposed duct or, for that matter, any other area with gauze is to be condemned. Stripping a duct to give better exposure is wholly unjustified; it should be opened through an area devoid of visible vessels, with its fascial envelope left intact and when it is resutured all visible vessels should be avoided; none should be ligated or included in a suture.

5. Ligation of a cystic artery should never be done near the source of the artery. The descending branch to the common duct may take origin well out along the vessel. The cystic artery should be followed out to the wall of the gallbladder and ligated there; if a visible descending branch is seen, it should by all means be preserved.

6. In all cases, total disappearance of ducts is due to necrotization caused by interference with the vascular supply. Anastomotic leaks following duct repair are frequently due to necrosis of an end caused by overexposure. Most fistulas are due to segmental necrosis, and in the healing thereof strictures are born.

> *The author, convinced that the majority of postoperative strictures of the common duct, as well as other unfortunate sequelae, are preventable, presents the results of his personal study and experience in solving this problem. He cautions the surgeon against "stripping" the common duct of its sheath to obtain better visibility and against scouring with a gauze swab. Strong emphasis is laid on the necessity of conserving the vessels that form the duct's blood supply. Careful opening of the duct, with deference to these vessels, through its natural coverings without any undue stripping, and closure over an indwelling tube that diverts the bile to its normal portal of exit are two basic principles that must be borne in mind if unhappy sequelae of operations on the common duct are to be averted.*

The parchment-like nature of the common duct can best be understood by realizing that no suture, be it ever so fine, can be placed in a common duct that will not leak; that even the smallest needle aspiration of the duct, be it ever so fine or be it ever so slanted, will leak. A better understanding of the intimacy of common duct vascularization and the adoption of surgical methods in greater deference to its principles, may indeed be the light at the end of the tunnel.

The Action of Bile on Devitalized Tissues.—Bile is, on the whole, a kindly fluid, and will find its way home if the possibility exists. This is in direct contrast to such external leakages as those of urine and saliva. Bile is nonirritating to normal

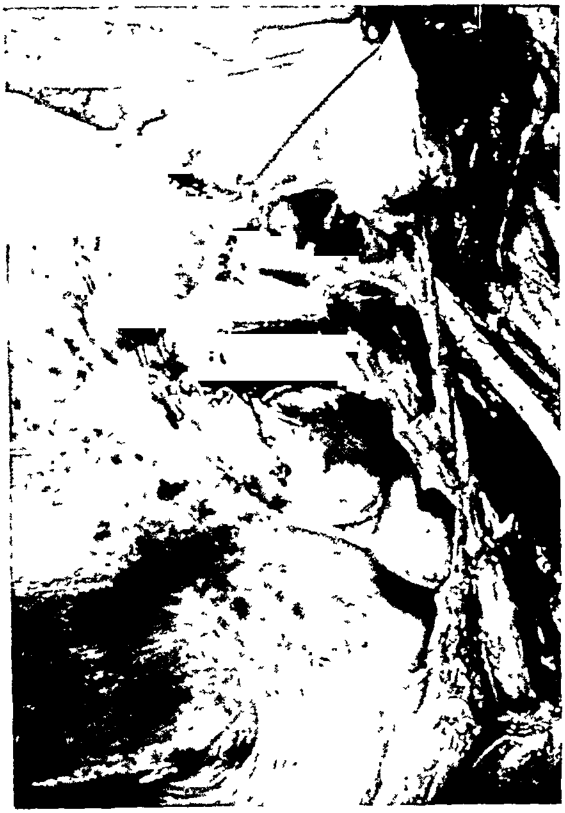

Fig. 1.—Wilkie's supraduodenal artery, from which large choledochal artery is seen ascending on lateral surface of common duct.

tissues, and many a cystic duct ligature has slipped off, causing a huge accumulation of bile free in the abdomen, without in most instances even the knowledge that it has occurred unless drainage has been employed. In the absence of infection it is as innocuous as serum or ascitic fluid. The much-feared bile peritonitis bears a name that does not convey a true impression. Bile peritonitis is just ordinary infective peritonitis. In the absence of continued soilage, however, peritonitis tends to localize, but, if there is a substantial bile leak in the presence of infective peritonitis, the bile, from sheer quantity, acts as a vehicle of transport to every remote recess of the abdomen. Bile peritonitis is total peritonitis. Its great seriousness lies in its totality, not in anything sinister intrinsically referable to bile itself.

The continued action of bile on devitalized tissue is quite different from its action on normal tissue. Innocuous to normal tissue, it has a serious necrotizing effect on devitalized tissue. One might liken my concept of the action of bile on devitalized tissue to that of wolves in a pack, which work together in full synchrony of purpose as long as all goes well, but let one of the pack be wounded and the others turn upon him and devour him at once. So it is with the action of bile on devitalized tissue; the normally innocuous fluid exerts a necrotizing action on that area of the common duct which has become underprivileged from minimal vascular interference, with resultant fistula and subsequent stricture. If the blood supply to the major portion of the duct is interfered with, the action of bile sets up colliquative necrosis, which results in total destruction of the duct. In substantiation of this premise, the well-vascularized intrapancreatic portion of the duct and the intrahilar bifurcation are invariably intact.

In my opinion the wolflike action of bile on its damaged host explains clearly the total failure of such procedures as homografts, autografts, venographs and many end-to-end anastomoses; they simply disappear. The only type that will survive is a vascularized mucous-lined tube such as a defunctionalized loop of jejunum, and then only because it frustrates the action of bile on devitalized tissue.

Drainage of the Common Duct.—This presentation concerns only the manner in which a common duct is drained, and the various indications for drainage will not be discussed. Two simple principles, however, at once emerge. In any common duct that arouses enough suspicion to warrant exploration, that exploration is not complete without easy passage of a bougie through the ampulla of Vater into the duodenum. The extent to which the sphincter of Oddi[3] and the ampulla should be dilated is perhaps open to argument, but a minimum of 7 mm. should be mandatory, and persistent refusal of a 3 mm. bougie to pass is an indication for opening the duodenum. The second, less well established principle is that when a common duct is explored and found to be normal, simple closure of the duct, without any form of ductal drainage, should be carried out. While a simple drainage tube down the gallbladder fossa is advisable, merely opening a normal duct does not call for a T tube or other ductal drainage. Simple sutures suffice.

While devitalized tissue may be able, for a short time, to withstand the necrotizing action of bile, I am convinced that the time element is most important, and the longer exposure to bile action is permitted, the more certain is dense scar formation to follow. With this in mind, I cannot but maintain that the constant leak around a T tube or other tube emergent from the duct, acting for any length of time on the traumatized edges of the opening through which it emerges, is the most potent single cause of postoperative cicatricial formation or stricture. In consequence, I have for many years attempted to discredit the use of T tubes in biliary surgery.

Indwelling Common Duct Tubes.—This report is based upon 1936 operations, done by myself on the biliary tract, of which I have record up to the end of 1956. In 562 of these the common duct was explored openly; in 204, simple external catheter drainage was employed; in 97, simple primary closure was carried out, and in 261 an indwelling common duct tube was used. It is the last-mentioned group of 26 cases that I wish particularly to discuss. The obvious disadvantages of T tubes, apart from the longer exposure of sick tissue to bile action, need little comment. Diversion of the bile in whole or in part, lengthened hospitalization, occasional difficulties of removal, constant dressings, and the partial anchorage of the patient to the collection mechanism, as well as the unfavorable psychic impact of external drainage, are all factors to be considered.

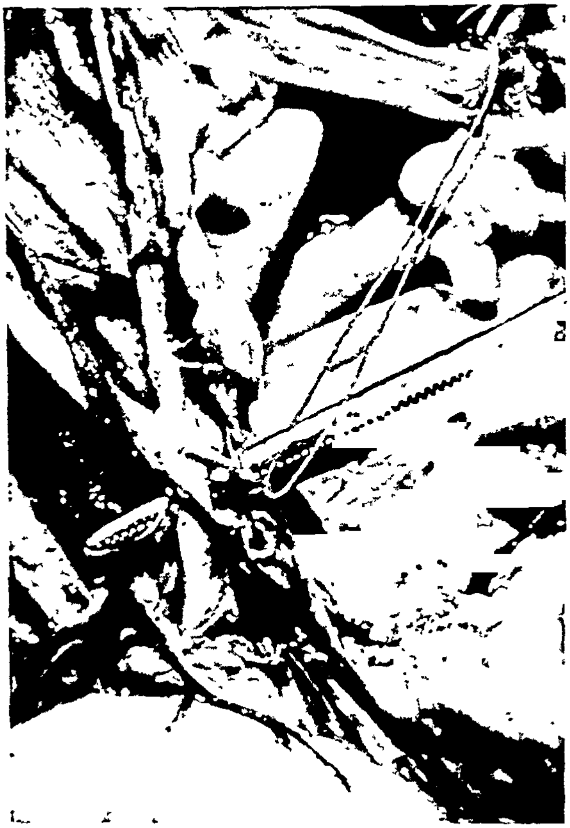

Fig. 2.—Tip of forceps almost touching common duct. Choledochal artery is clearly visible, descending from Wilkie's supraduodenal artery.

Indwelling tubes permit sound healing in ten days, shortened hospitalization, no tubes, dressings or external drainage and minimal disadvantages. Mass postoperative cicatrization is eliminated.

The most frequent question I have been asked is, "What kind of a tube do you use?" I find a simple segment of new red rubber catheter is best. It should be used as follows: After the duct has been thoroughly cleansed and the ampulla dilated to at least 7 mm., preferably 9 mm., the duct replacement will ever be wholly successful that fails to utilize this perfectly vital lower end of the duct by anastomosing it to the lower end of whatever vital substitute loop is used. The difficulty of the procedure and the discrepancy in size of the two structures must be overcome to provide the lower end of the substitute loop with its normal sphincter mechanism of control, and the bile must ultimately be made to enter the bowel through the ampulla of Vater. Only then is the tragedy of recurrent febrile episodes likely to be averted.

What Has Happened to These Indwelling Tubes?—Of 260, one has remained stuck fast for eleven years but has caused no trouble. Since the duct had been practically destroyed, however, if the tube ever does pass or disintegrate a serious problem may arise. Four tubes have required removal on the assumption that they were obstructed; only two of the four actually were obstructed with muco-bile plugs. The projecting portion of the tube within the duodenum almost invariably becomes encrusted with a barnacle-like mass of detritus from the intestinal canal, but there is a sharp line of demarcation between the intraductal and the intraduodenal portion.

The intraductal portion of the expelled tube has always been quite clean. In 1 case severe hemorrhage occurred on the fifth day, coming from the duodenal area and ceasing on removal of the tube. In 3 cases there was severe colic a month after the operation, requiring morphia; all tubes were passed by rectum on the following day. One patient, who had previously undergone gastric resection with an anterior Billroth II operation, vomited his tube without incident on the seventeenth postoperative day. In 5 cases febrile reactions developed, thought to be due to subphrenic abscess, two of which were identified as such and drained. The fact that in only 2 of the 260 cases in which indwelling tubes were used did common duct strictures, identifiable as such, develop and require secondary operation, is so far below the average when T tubes are used as to leave no shadow of doubt that the indwelling tubes carry a much lower morbidity rate than does any other type of drainage of the biliary tract.

The many fears and objections that have been presented to me, such as blockage of the pancreatic ducts, ulceration of the ampulla of Vater with subsequent cicatrization and stricture, irritation of the duodenum, etc., are in the same category as the tragedies that Mr. Bernard Baruch has found besetting his life; most of them never happened. I have never seen evi-

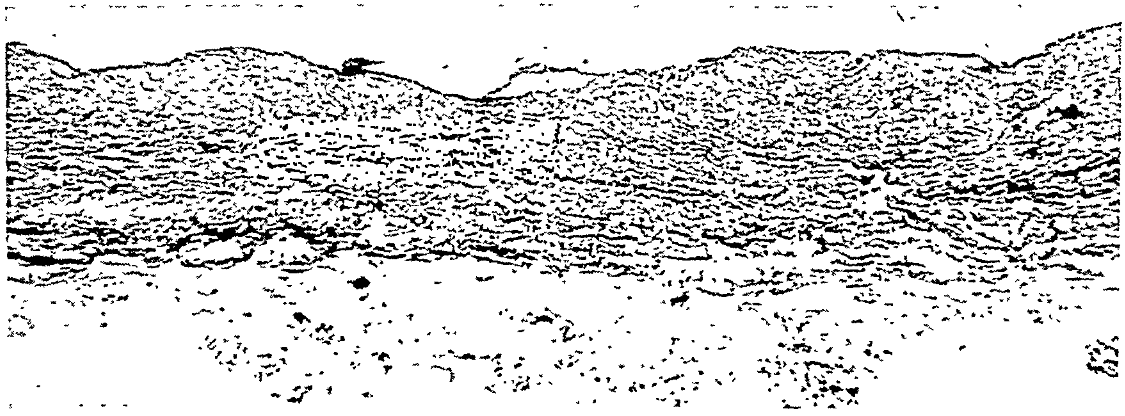

Fig. 5.—Common duct in longitudinal section, showing almost complete absence of musculature in this parchment-like structure.

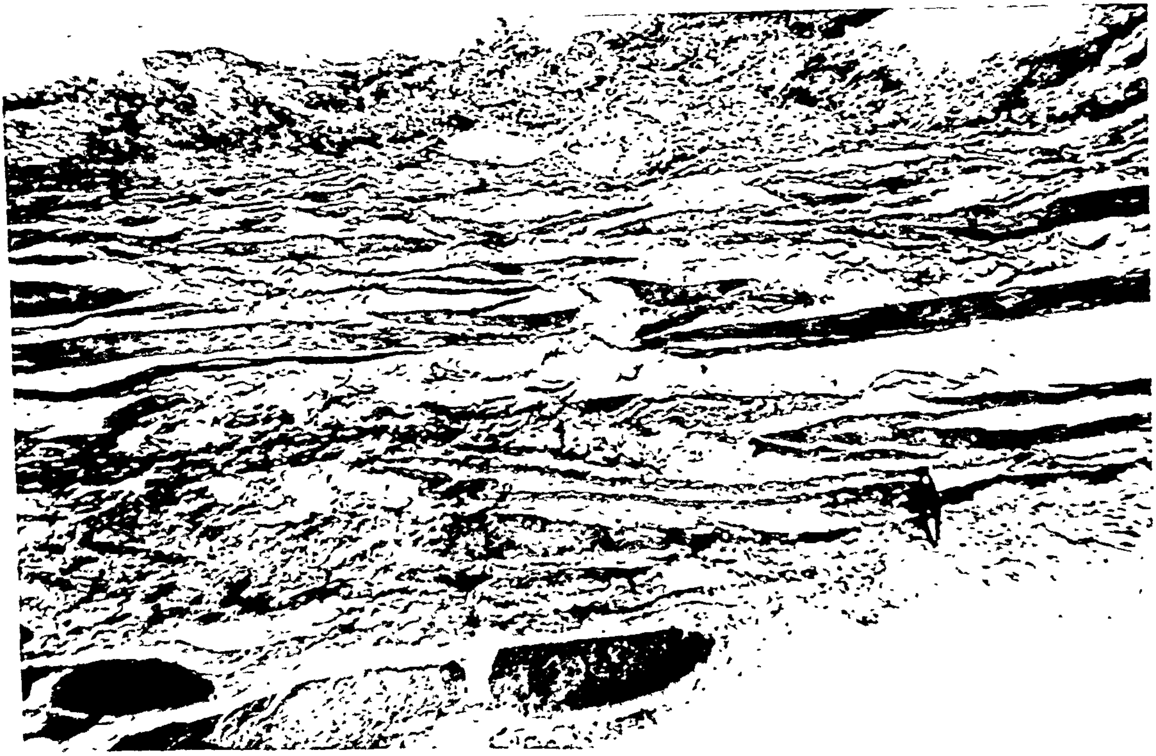

Fig. 6.—Longitudinal section of area of ampulla of Vater, showing abundant concentrated musculature of ampulla compared to absence of musculature in common duct proper.

dence of obstruction of pancreatic ducts following the use of indwelling tubes. Patients should, however, be warned that a tube was purposely left in and will ultimately pass. Failure to do this or to have the fact properly recorded on hospital records may lead to suggestions of oversight or to liability.

SUMMARY

The author is convinced that the vast majority of postoperative duct strictures and other unhappy sequelae are largely preventable. It is so very easy when massive duct destruction is observed at a secondary operation, the primary procedure having been carried out elsewhere, to point out what an ignoramus one's predecessor must have been. The argument loses much of its humor when one is one's own predecessor. Criticism of a predecessor is probably wholly undeserved.

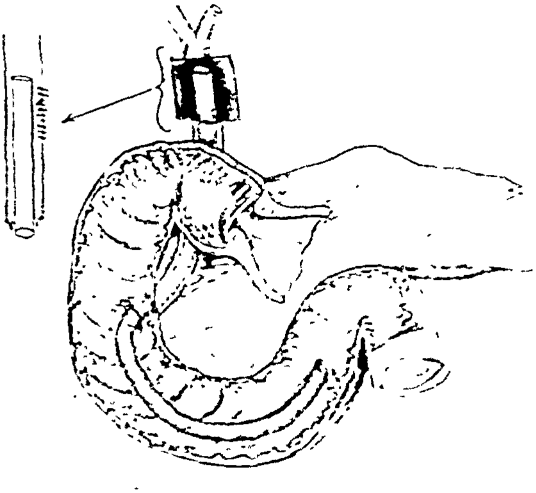

Fig. 7.—Indwelling tube recommended for use in replacement procedure instead of usual T tube.

Not by any means is the visible artery on the supraduodenal part of the common duct necessarily the only artery of supply to the duct, but in a reasonable percentage of cases it may be and it is in these that a "bleeder" thoughtlessly ligated may prove disastrous.

"Stripping" a common duct of its enveloping sheath for greater visibility cannot be too strongly condemned. Scouring with a small gauze swab is never necessary and frequently harmful. The "feet of the millipede" are needlessly pulled out and a wall wholly fibrous, containing no muscle, can ill afford such treatment. Delayed sequelae are the inevitable result.

A much more careful approach to vascular architecture of the common duct will largely eliminate harmful and dangerous sequelae.

The action of bile on devitalized tissue causes extensive necrotization with dense fibrous tissue formation. Few adhesions compare in density with those in the area of a biliary leak. All possible methods of minimizing the time that bile is allowed to be in contact with such tissue should be employed, and in my opinion T tubes and other emergent tubes that are allowed to remain in place for weeks prepare the soil for exactly the situation of dense fibrosis which it is most important to prevent.

Careful opening of the duct, with deference to its vascularity, through its natural coverings without any undue stripping and the closure of the duct over an indwelling tube that diverts the bile to its normal portal of exit and cuts down to a few hours or days the time when even small amounts of bile are allowed to come into contact with gallbladder fossae and duct environs, will, in my opinion, become the operation of the future for disease of the biliary tract.

ZUSAMMENFASSUNG

Der Verfasser ist überzeugt, dass die grosse Mehrzahl postoperativer Gallengangsstrikturen und anderer unerfreulicher Folgeerscheinungen sich in hohem Masse vermeiden lässt. Es ist sehr leicht, auf die Unfähigkeit eines chirurgischen Vorgängers hinzuweisen, wenn man beim zweiten Eingriff schweren Veränderungen des Gallengangs begegnet, und wenn der erste Eingriff an anderem Orte erfolgt ist. Wenn man selbst der Vorgänger ist, ist die Situation schon viel weniger komisch. Kritik am Vorgänger ist wahrscheinlich völlig unberechtigt.

Die sichtbare Arterie am supraduodenalen Abschnitt des Choledochus ist keineswegs notwendigerweise das einzige den Gang versorgende Gefäss, in einem erheblichen Prozentsatz der Fälle jedoch kann das so sein, und dann kann sich die gedankenlose Unterbinlung eines "Bluters" als verheerend erweisen.

Das "Abziehen" der Umhüllungen des Choledochus zum Zwecke seiner besseren Darstellung kann nicht schwer genug verdammt werden. Das Abschrubben mit einem kleinen Gazetupfer ist niemals notwendig und oft schädlich. Die "Füsse des Tausendfüsslers" werden unnötigerweise herausgezogen, und eine völlig fibröse, keine Muskeln enthaltende Wand verträgt eine derartige Behandlung schlecht. Späte Folgeerscheinungen sind das unvermeidliche Resultat.

Durch erhöhte Vorsicht beim Zugang zum Gefässapparat des Choledochus wird man unangenehme und gefährliche Folgeerscheinungen in grossem Umfang ausschalten.

Die Wirkung von Galle auf devitalisiertes Gewebe führt zu umfangreicher Nekrotisierung mit Bildung von dichtem Bindegewebe. Nur wenige Verwachsungen lassen sich an Dichtigkeit mit denen vergleichen, die im Gebiet des Lecks eines Gallengangs entstehen. Es sollte kein Handgriff versäumt werden, um die Zeit des Kontakts von Galle mit solchem Gewebe auf ein Minimum abzukürzen. Der

Verfasser glaubt, dass T-Rohre und andere Galle drainierende Katheter, die wochenlang liegen gelassen werden, den Boden zur Entwicklung gerade dieses dichten Bindegewebes bilden, dessen Vorbeugung er für äusserst wichtig hält.

Der Verfasser glaubt, dass die vorsichtige Eröffnung des Gallenganges unter sorgfältiger Berücksichtigung seiner Gefässversorgung durch seine natürlichen Hüllen hindurch ohne übermässiges Abschrubben und die Schliessung des Ganges über einem liegenbleibenden Drain, der die Galle auf ihrem normalen Abflusswege ableitet und den Kontakt auch nur geringer Mengen von Galle mit dem Gallenblasenbett und den Umgebungen des Ganges auf wenige Stunden oder Tage einschränkt, die Operation der Zukunft zur Behandlung von Erkrankungen des Gallengangssystems sein wird.

RÉSUMÉ

La grande majorité des rétrécissements post-opératoires du canal biliaire ainsi que d'autres séquelles malencontreuses pourraient être évités. Il est si simple, en présence d'une destruction massive du canal au cours d'une réintervention—la première opération ayant été pratiquée par un collègue,—d'accuser son prédécesseur d'incapacité totale. Mais cet argument perd beaucoup de son humour si l'on est soi-même son propre prédécesseur. La critique du prédécesseur est probablement tout à fait injustifiée.

L'artère visible sur la partie supraduodénale du canal n'est en aucune façon nécessairement sa seule artère nourricière; mais elle peut l'être dans un pourcentage raisonnable de cas, et c'est dans ces cas qu'une artère inconsidérément ligaturée peut provoquer un désastre.

Le fait de "dépouiller" un canal de ses gaînes protectrices en vue d'une meilleure visibilité ne saurait être condamné assez sévèrement. Le tamponnement n'est jamais indispensable et il est souvent néfaste; une paroi entièrement fibreuse, sans muscle, ne supporte guère un tel traitement. Il en résulte d'inévitables séquelles tardives.

Une voie d'approche beaucoup plus délicate de l'architecture vasculaire du canal s'impose en vue d'éliminer au maximum des séquelles dangereuses.

L'action de la bile sur un tissu dévitalisé provoque une nécrose étendue avec formation dense de tissu fibreux. Il est peu de fibroses aussi denses que celles se situant au niveau d'un suintement biliaire. Il faut recourir à toutes les méthodes possibles afin de réduire le temps permettant à la bile d'entrer en contact avec un tel tissu, et l'auteur estime que les tubes en entre autres maintenus en place durant des semaines, préparent précisement le terrain à une fibrose dense qu'il est de toute importance d'éviter.

A son avis, l'opération de l'avenir pour les affections de la vésicule biliaire consiste en l'ouverture prudente du canal en ménageant sa vascularisation et sans "dépouillement" injustifié de ses gaînes; fermeture du canal par-dessus un tube déversant la bile vers sa sortie portale normale. Cette technique permet de réduire à quelques jours ou même à quelques heures le temps pendant lequel des quantités même infimes de bile pourraient entrer en contact avec la fossette cystique et les environs du canal.

RIASSUNTO

L'autore è convinto che tutte o quasi le stenosi post-operatorie siano prevenibili. Durante un reintervento sulle vie biliari si possono trovare ampie perdite di sostanza del coledoco, dovute ad un precedente intervento eseguito altrove; le critiche al predecessore sono molto spesso immeritate.

Non sempre l'arteria visibile nella porzione sopraduodenale del coledoco è l'unica

arteria che lo irrora, ma spesso è così e in tale caso la sua legatura può essere disastrosa.

Anche il denudamento del coledoco dal suo rivestimento mon sarà mai condannato abbastanza; la sua dissenzione con tamponi di garza non è mai necessaria e spesso è pericolosa; si avranno inevitabilmente dei postumi, mentre un'accurata osservazione dell'architettura vascolare del coledoco potrà eliminare in gran parte ogni inconveniente.

Lá bile, agendo su tessuti devitalizzati, provoca delle necrosiestese con formazione di tessuto cicatriziale; poche aderenze sono paragonabili, per compattezza, a quelle che si producono in conseguenza degli stravasi di bile. Bisogna far in modo di ridurre al minimo il tempo durante il quale la bile rimane a contatto con i tessuti; l'autore ritiene che i tubi a T e tutti gli altri tubi che comunemente vengono usati e tenuti in posto per settimane preparino il terreno alla fibrosi, che è proprio l'inconveniente da evitare in ogni modo.

Egli pensa che l'intervento ideale nelle malattie delle vie biliari sia rappresentato da un'accurata apertura del coledoco, rispettando la vascolarizzazione e passando attraverso il suo naturale rivestimento senza asportarlo, e dalla successiva chiusura su tubo di protesi che derivi la bile verso il suo scarico naturale; verrà ridotto a poche ore o giorni il tempo in cui anche piccole quantità di bile vengono a contatto con le strutture circostanti.

RESUMEN

Cree el autor que la mayor parte de las estrecheces ductales postoperatorias y algunas otras secuelas pueden ser evitadas. Cuando en una segunda operación se encuentra una destrucción masiva del colédoco consecutiva a una primera practicada en otro servicio puede pensarse que el primer cirujano no sabemos cómo era. Esta afirmación pierde algo de su humor cuando el cirujano predecesor es uno mismo. Por esto la crítica sobre el cirujano que hizo la primera intervención es del todo inmerecida.

De ninguna manera es cierto que la arteria visible sobre la parte supraduodenal del colédoco sea la única arteria nutricia de éste, pero en una importante cantidad de casos debe admitirse que la ligadura, sin pensar más, de este vaso que sangra puede resultar desastrosa.

El mondar un colédoco de su vaina envolvente para lograr una sibilidad mayor no debe ser demasiado vivamente condenado. Nunca es necesario frotar con una gasa, y sí muchas veces peligroso. Es inecesario arrancar las "patas del ciempiés" y una pared exclusivamente fibrosa, sin fibras musculares aguantará penosamente este trato. Las secuelas tardías serán la consecuencia inevitable.

La disección muy cuidadosa de las estructuras vasculares del colédoco evitará las secuelas nocivas y peligrosas.

La bilis, al actuar sobre tejidos desvitalizados, origina desvitalizaciones extensas con formación de tejido fibroso. Pocas adherencias pueden compararse en densidad con las que suelen formarse en torno a las vías biliares. Todos los medios que acorten el tiempo de contacto de la bilis con estos tejidos deben ser empleados y en la opinión del autor los tubos en T, y otros tubos de drenaje que se dejan aplicados por varias semanas predisponen a la formación de la fibrosis intensa que es lo que precisamente debe evitarse.

La apertura cuidadosa del ductus con atención a su vascularización a través de sus cubiertas naturales sin mondarlo bruscamente y el cierre meticuloso sonre el tubo que se deje para desviar temporalmente la bilis acortando el tiempo de contacto de la bilis con las estructuras cicundantes debe ser en adelante, de acuerdo con el autor, la técnica de elección en la cirurgía para las enfermedades biliares.

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Patients have now for a full century been accustomed to having their physician count the pulse and listen to the heart. They expect this as part of their examination. But in recent years, if there is any irregularity in the heart-beat, the physician straps a pulse writer on the wrist and takes a tracing of the pulse, or the electrocardiogram is utilized and an "electrocardiogram" made. The development of these newer instruments of precision is an interesting story and a quite modern one.

For a generation or more the physician had no method of diagnosing heart-disease except by the use of the stethoscope. He listened to the beating of the heart, and if the sounds were clear and sharp, the patient was told his heart was normal. If the heart-sounds were accompanied by murmurs, he was told he had valvular heart-disease. If the patient's heart was irregular in its beating, the physician was quite at sea. The doctor, if of a sanguine temperament, usually told his patient to forget it; if he were of a more cautious and apprehensive disposition, he put him to bed.

This uncertainty led to grave errors in diagnosis. Many patients who had loud heart-murmurs seemed not to suffer the least inconvenience, but worked hard until ripe old age. Some patients with irregular hearts who were told to forget it died suddenly, to the great distress of their friends and to the damage of their physicians' reputations. Other patients who were told to keep to their beds because their hearts were irregular stayed in bed for a time, then got up and went about for years, working hard and carrying their irregularity with them.

—*Major*

Intra-Operative Choledochoscopic Study

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IN 1953, at a meeting of the German Society of Surgeons in Munich, Wildegans of Berlin showed for the first time a new instrument he had devised, the choledochoscope. In 1956 he published his first experiences with the choledochoscope technic, pointing out the diagnostic possibilities of intra-operative endoscopic study of the bile ducts in the presence of cholelithiasis. He closed this contribution with the following words: "May this information stimulate a critical testing and use of the endoscopy."

Since April 1956 I have used the choledochoscope in all cases in which it has been anatomically possible to introduce it into the bile ducts. At the time of writing I have made unexpected discoveries in nearly 100 cases in which the instrument was employed, and I present a brief account of my experience.

Choledochoscopes (15 to 25 Charriere) are now available. The choledochoscope is easy to operate. It permits a survey of form and position of passages, changes of the mucosa, size and form of the papilla and, above all, the amount, size and position of stones and stone slime. Of 49 cholecystoscopic studies, unexpected observations resulted in 23 cases; in 14 cases the results led to change of the original plan of operation. The choledochoscope represents a great advance in the surgery of the gall passages. It will make cholangiographic studies superfluous in many cases and will help to lower the incidence of recurrent operations.

The choledochoscope originally developed by Wildegans is available in sizes 18, 20 and 25 Charrière.[1] Size 18 will best meet practical requirements. Recently another choledochoscope has been developed,[2] to which one can attach, by screwing them onto the main instrument (the shaft), tubes of various sizes Charrière. With the size 15 tube, therefore, it is possible to use the instrument also for examining the smaller ducts.

Since their introduction the choledochoscopes have been considerably improved. A small forceps can be passed as if through a cystoscope, either with sharp branches for obtaining a biopsy specimen or with dull branches to remove stones from the common duct, as well as the hepatic duct and its branches (Fig. 1).

It is also possible to slide a wire sling through the scope if, for instance a stenotic papilla of Vater has to be split electrically (Fig. 2). In addition, the instrument can be used with button-tipped wire for coagulation. Because of continuous rinsing with sterile solutions through the instrument the surgeon has always a clear view during an operation within the bile ducts. With this instrument he can see not only the entire length of the common duct and the papilla of Vater but the hepatic duct and its different branches

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[1] Manufactured by Sass, Wolf & Co., Berlin.

[2] Manufactured by Richard Wolff, GmbH, Knittlingen-Wurttenburg, Germany.

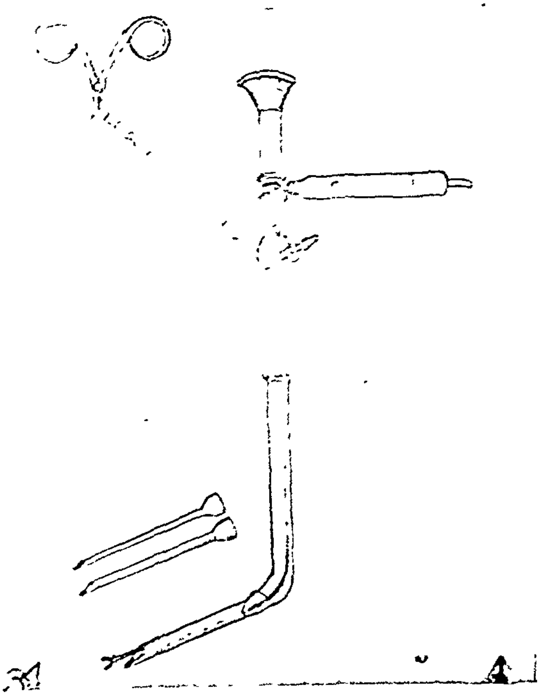

Fig. 1.—Choledochoscope developed by Wildegans (see text).

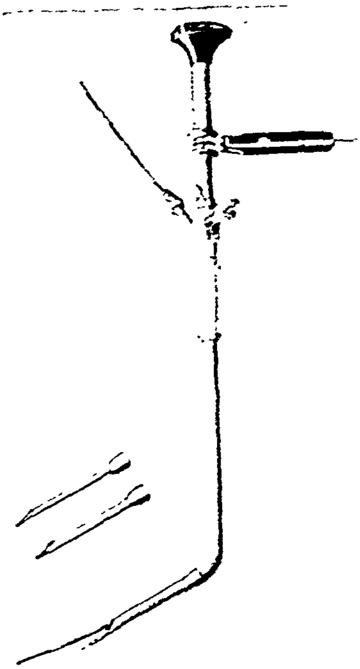

Fig. 2.—Choledochoscope developed later (see text).

within the depths of the liver. All inflammatory changes of the mucosa and all tumor formations are visible. Most important, however, is the size, number and shape of calculi.

The instrument is easy to operate. One who knows how to manage the cystoscope will be familiar with the technic of endoscopic study of the bile ducts in a short time. As a rule I use the choledochoscope after the common duct has been opened, when the width of the orifice makes introduction easily possible.

Of my first 49 cases, as is shown in the accompanying table, more or less fully developed jaundice was present in 24. In 8 cases intermittent jaundice was observed, and in 17 there were no icteric symptoms. Of the 49 cases there were 23 in which the instrument was introduced only once, while in 26 cases it was necessary to insert the instrument several times for inspection, etc. On one occasion, the common duct being heaped with stones, it was necessary to introduce the instrument fifteen times to make sure that even the smallest particles of calculi had been removed from the intra-hepatic ducts. Only by using the choledochoscope can one quickly and exactly determine the cause of a bad condition of the papilla of Vater (inflammatory changes, stone impaction.

Data on 49 Choledochoscopic Studies

Total Cases	*Jaundice Present*	*Intermittent Jaundice*	*No Jaundice*	*Choledochoscopic Study During Operation*		*Plan for Operation Changed*	*Unexpected Observations*
49	24 cases	8 cases	17 cases	Once	23 cases	14 cases	27 cases
				Several times	26 cases		

neoplasm, etc.). Of the total of 49 cases, unexpected observations resulted in 23, and in 14 cases the observations led to a change in the original plan of operation.

If the cystic duct is wide enough, one may introduce the instrument through it and look into the common and hepatic ducts to decide whether or not the common duct must be opened.

Before I started using the choledochoscope I always made preoperative intraoperative cholangiographic studies by means of either single or serial films. As all surgeons know, in some cases the calculi cannot be visualized, especially if they are in the intrahepatic ducts. Valuable as intra-operative cholangiographic study used to be, it becomes useless, at least in these cases in which satisfactory visualization and examination of the bile ducts can be climaxed by using the scope.

It is not my intention to list single cases here, but it is safe to say that so many surprises and unexpected discoveries result from choledochoscopic study that those who employ it will not only consider it a great enrichment in surgical technic but will be convinced that the number of repeated operations can be lowered considerably.

RÉSUMÉ

Lón dispose maintenant de cholécystoscopes du type 15-25 Charrière dont la technique d'utilisation est simple. Ils permettent d'observer la forme et la position des voies biliaires, les modifications de la muqueuse, la dimension et la forme de la papille, et, surtout, le nombre, la dimension et la position des calculs et du limon vésiculaire. Sur 49 examens cholécystoscopiques, 23 cas ont révélé des observations inattendues, ayant conduit dans 14 cas à une modification du plan opératoire prévu. Le cholécystoscope représente un grand progrès dans la chirurgie des voies biliaires. Il rendra superflue la cholangiographie dans de nombreux cas et contribuera à réduire la fréquence des réinterventions chirurgicales.

RESUMEN

Se dispone ya de coledocoscopos de los números 1 al 25 Charriere. Proporcionan tales instrumentos información visual sobre la forma y proporción de los conductos, alteraciones, de la mucosa, tamaño y forma de la papila y, sobre todo, número, tamaño y posición de cálculos y barro biliar. En 49 estudios de colecistoscopias se han encontrado 23 observaciones inesperadas; en 14 casos estos resultados hicieron cambiar el plan de la operación. El coledocoscopio representa un gran progreso en la cirugía de las vías biliares. Esta técnica evita muchas colangiografías y ayuda a disminuir la frecuencia de las recidivas.

ZUSAMMENFASSUNG

Choledochoskope von Kalibern zwischen 15 und 25 Charrière sind jetzt verfügbar. Die Handhabung des Instrumentes ist leicht. Es ermöglicht, die Form und Lage der Gallenwege, Veränderungen der Schleimhaut, Grösse und Form der Papille und vor allem die Menge, Grösse und Lage von Steinen und Sand in den Gallenwegen zu untersuchen. Unter 49 cholezystoskopischen Untersuchungen kam es in 23 Fällen zu unerwarteten Beobachtungen; diese führten in 14 Fällen zu Änderungen des ursprünglichen Operationsplanes. Das Choledochoskop stellt einen grossen Fortschritt in der Chirurgie der Gallenwege dar. Es wird in vielen Fällen cholangiographische Untersuchungen überflüssig machen und zur Herabsetzung der Zahl von Nachoperationen beitragen.

RIASSUNTO

Sono stati costruiti dei coledocoscopi del numero 15-25 Charrier, molto facili da usare, con cui è possibile studiare la forma

e la posizione dei vari tratti, le modificazioni della mucosa, le dimensioni e la forma della papilla, e — soprattutto — il numero, la grandezza e la posizione dei calcoli e della sabbia biliare. Su 49 colecistoscopie vi furono 23 reperti inattesi, e 14 volte fu necessario modificare il piano operatorio. Il coledoscopio rappresenta una importante conquista nella chirurgia delle vie biliari; esso finirà per rendere inutile la colangiografia in molti casi e aiuterà a diminuire considerevolmente i casi di recidiva.

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Most surgeons pass through three stages. In the first they are young and enthusiastic, stored with an immense amount of information that they have acquired in passing their Fellowship and Mastership examinations, full of ideas that they mean to work out, safe and skilful but stereotyped operators, very poor and entirely unknown. In the second their knowledge has been coloured by personal experience, and if they are made of the right stuff, has been built up into surgical wisdom: their ideas have been cultivated and have borne fruit in contributions to surgical science, and in a more general way in an outlook that is their individual contribution to the store of their time: their technical work is polished and perfected by constant practice, the elimination of unnecessary steps, and the adoption of all that they consider best in the work of others, and the knowledge borne of experience which teaches the particular device best suited to the particular problem: they get plenty of patients from those who know the value of their work, and they make a reasonable income, most of which is spent in educating their children. In the third stage we may picture them graced with a title, operating for large fees on the nobility and plutocracy and enjoying a brief period of real prosperity, rising with a fortunate few to a third of the income of a successful barrister: they have ceased to modify their ideas and their operating is perfect and standardized.

—*Ogilvie*

Elective Subtotal Gastrectomy for the Treatment of Peptic Ulcer

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SINCE Billroth performed the first gastrectomy on a human being on Jan. 29, 1881, thirty-eight additional methods for restoring the continuity of the gastrointestinal tract have been developed. The fact that so many procedures have been employed demonstrates that the problem of treatment of ulcer disease is still somewhat unsettled. All those procedures have the same purpose: to remove the ulcer and achieve achlorhydria.

Recently, much criticism has been directed even toward those procedures that have withstood the test of time, to the extent that other procedures have been added, most of which include the section of the vagus nerve. We refer to gastroduodenostomy with vagotomy, gastrojejunostomy with vagotomy, antrectomy with vagotomy and, most recently, pyloroplasty with vagotomy. It is not the purpose of this communication to discuss the merits or the disadvantages of the aforementioned procedures; rather, we present the experience of St. Catherine's Hospital in dealing with surgical treatment of the peptic ulcer, hoping to bring some light to the still unsolved problem.

This article is a review of 303 cases in which the patients underwent subtotal gastrectomy for peptic ulcer.

A modification of the open technic employed in closing the duodenal stump is described, and the conditions that govern the decision whether to resect or to by-pass the ulcer are discussed. The results of treatment, immediate and as observed in follow-up studies, are presented.

Clinical Material.—From 1950 to 1957 inclusive, 362 subtotal gastrectomies were performed in this institution. Some were done by members of the general surgical staff and some by the surgical residents, the latter always under the supervision of a staff member. Of the 362 operations, 182 were done for duodenal ulcer, 109 for gastric ulcer, 11 for gastric and duodenal ulcer, 15 for multiple ulcers and 15 for multiple lesions. Patients in the last-mentioned category were admitted for the treatment of ulcer, either duodenal or gastric, but at operation an associate lesion was observed and was later confirmed by the pathologic report. There were 15 such cases. There were 4 cases of duodenal diverticulum, 4 cases of pseudodiverticulum, 1 case of hemangioma of the pyloroduodenal juncture, 1 case of neurofibroma of the antral region, 1 case of jejunal papilloma, 1 case of lymphangioma of jejunum and 2 cases of polyps of the pylorus. There were 9 cases of hypertrophic gastritis and 2 cases of chronic hemorrhagic gastritis. There were 19 cases of resectable carcinoma of the stomach (Table 1).

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Indications.—The indications for the operation are listed in Table 2. "Intractable" ulcers were those causing pain that was not relieved by medical treatment. It has always been a rule in this institution to give a patient with duodenal ulcer a trial with a medical regimen for at least six to eight months, and to one with gastric ulcer, a trial of four to six weeks, before operation is contemplated. "Obstruction" indicates a long history of peptic ulcer, with scarring and stenosis of the pylorus. By "perforation" we indicate patients in whom the ulcer had perforated into the peritoneal cavity, permitting the gastric and duodenal contents to enter this cavity. "Bleeding" indicates cases in which, either in the hospital or before admission, there were episodes of repeated gastrointestinal bleeding that required surgical treatment. Under the term "combined" are listed patients who had a past history of either obstruction or intractability.

TABLE 1.—*Classification of 362 Cases*

		Per Cent
Duodenal ulcer	182	50.27
Gastric ulcer	109	30.11
Gastric & duodenal ulcer	11	3.03
Multiple ulcer	15	4.14
Multiple lesions	15	4.14
Chronic hypertrophic gastritis	9	2.43
Chronic hemorrhagic gastritis	2	0.55
Carcinoma of stomach	19	5.24

TABLE 2.—*Indications for Operation*

		Per Cent
Intractability	181	50.00
Bleeding	86	23.75
Obstruction	59	16.29
Previous perforation	25	6.90
Combined	11	3.03

TABLE 3.—*Duodenal Ulcer (182 Cases)*

Male Patients: 150 *Age: 22 to 79*	*Female Patients: 32* *Age: 27 to 75*
20-29:4	20-29:1
30-39:22	30-39:4
40-49:36	40-49:9
50-59:71	50-59:14
60-69:13	60-69:2
70-79:4	70-79:2

TABLE 4.—*Gastric Ulcer (109 Cases)*

Male Patients: 85 *Age: 28 to 74*	*Female Patients: 24* *Age: 29 to 75*
20-29:1	20-29:1
30-39:12	30-39:1
40-49:30	40-49:9
50-59:24	50-59:11
60-69:17	60-69:1
70-79:1	70-79:1

Intractability was the most common indication for surgical intervention and occurred in 181 patients (50 per cent). The indication was obstruction in 59 patients (16.29 per cent); perforation in 25 (6.90 per cent), and bleeding in 86 (23.75 per cent). Eleven patients (3.03 per cent) have had signs referable to multiple indications. Of the 86 patients with gastrointestinal bleeding, the hemorrhage was massive in 40 and less than massive in 46.

Duodenal Ulcer.—There were 182 cases of duodenal ulcer (50.27 per cent) divided among 150 male and 32 female patients, with a ratio of 4.9:1. The youngest male patient was 22 years of age; the oldest, 79. The largest male group was composed of 71 patients aged 50 to 59. The youngest of the 32 female patients was 27; the oldest, 75. The largest female group comprised 14 women aged 50 to 59 (Table 3).

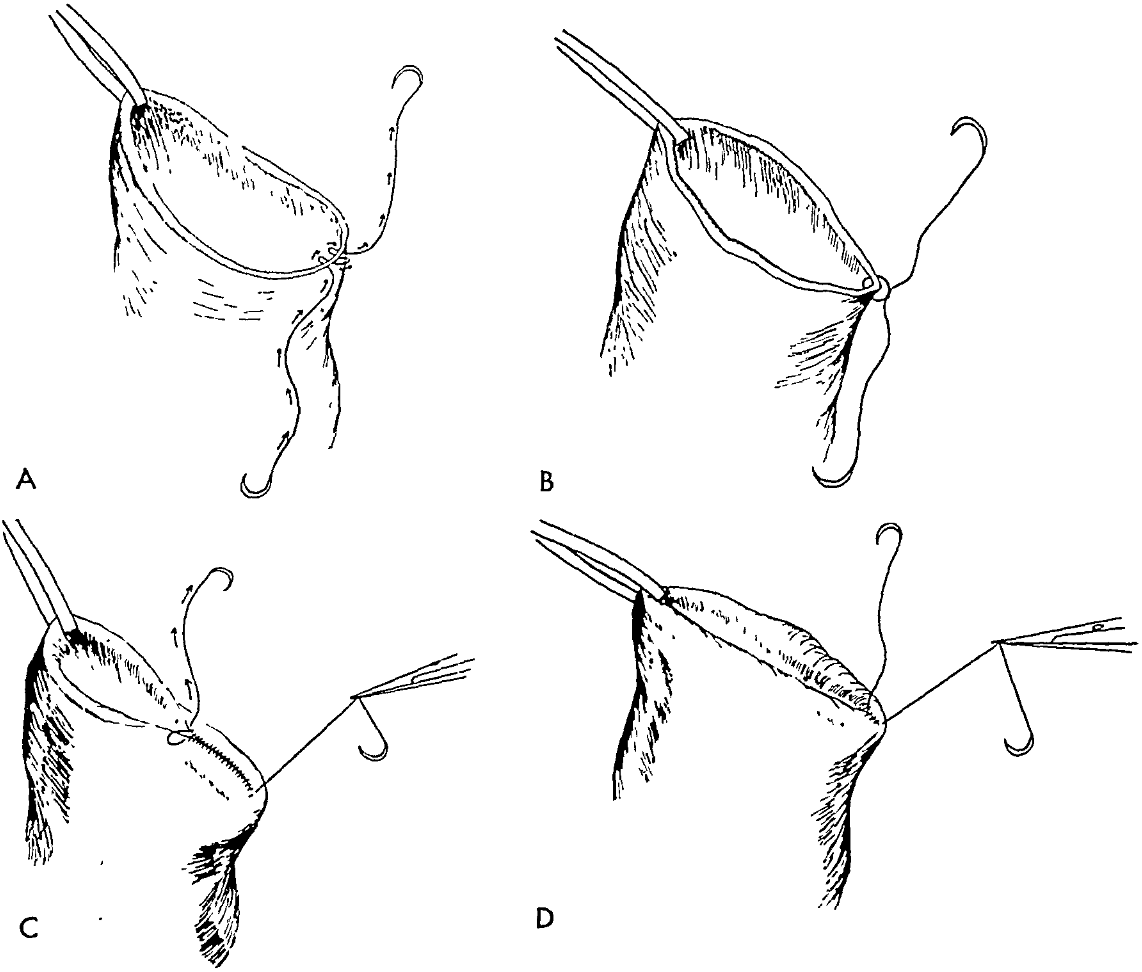

Fig. 1.—Closure of duodenal stump, commencing from right corner.

Gastric Ulcer. — Subtotal gastrectomy was required in 109 cases of gastric benign ulcer (30 per cent) during the same period, divided among 85 male and 24 female patients, a ratio of 3.54:1. The largest male group consisted of 30 patients between 40 and 49 years of age. The youngest was 28; the oldest, 74. The largest female group contained 11 women aged between 50 and 59. The youngest female patient was 29; the oldest, 75 (Table 4).

The 109 gastric ulcers were distributed as follows: 54 (49.54 per cent) in the lesser curvature; 38 in the pars pylorus (34.87 per cent); 9 in the prepyloric region (8.25 per cent); 6 in the antrum (5.5 per cent), and 2 in the greater curvature (1.74 per cent). See Table 5.

Notes on Technic. — Except in a few selected cases in which a Billroth I and a

TABLE 5.—*Location of Gastric Ulcers (109 Cases)*

		Per Cent
Lesser curvature	54	49.54
Pars pyloris	38	34.87
Prepyloric region	9	8.25
Antrum	6	5.50
Greater curvature	2	1.74

Hoffmeister procedure were performed, the anterior Polya, a modification of Billroth II, was the operation of choice. We secure a jejunal loop, carefully identified at the ligament of Treitz, to the remnant stomach in an isoperistaltic direction, with the efferent loop to the greater curvature and the afferent to the lesser curvature. We try to make the jejunal loop not too long because of the danger of kinking and, consequently, possible volvulus and torsion with intestinal obstruction, and not too short, for the purpose of preventing tension on the anastomotic line. In the earlier years of treatment of the group surveyed an almost routine posterior Polya was employed, but since several cases of partial and complete stomal obstruction occurred this method has been abandoned. An anterior anastomosis has been preferred ever since.

There is still much controversy as to whether the ulcer should always be excised or left behind. Many surgeons, among them Lahey, Lewisohn, Hinton, Marshall, Thompson and Stewart, maintain that removal of the ulcer bed is necessary for the cure of the ulcer in patients subjected to subtotal gastrectomy. Others, including Steinberg, McNealy, Colp, Reinhoff, Allen and Welch, have expressed the opinion that it makes no difference, provided high resection is done and all of the pyloric antrum removed. Certainly, removal of the ulcer should always be attempted. Nevertheless, in those cases in which the ulcer lies posteriorly, with erosion of the pancreas, and there is a possibility that entering the ulcer bed would impair the closure of the duodenal stump, the conservatism that some surgeons have shown with regard to this question is justified. Besides, in the former instances, the presence of pancreatitis and pancreatic abscess formation is quite evident.

No less hazardous are the cases in which there is a long history of pyloric stenosis and much inflammation and fibrosis are present around the ulcer bed, in which the duodenum is markedly displaced and foreshortened. In such cases the risk of injuring the common bile duct and the hepatic artery in closing the duodenal stump is a definite possibility. To avoid the fatal complication of transecting the common duct, Lahey and Marshall developed a method of exposing and intubating this duct structure with a T tube, so that relation of the ulcer bed to this structure may be visualized. In this institution, since we are unfamiliar with the method mentioned and share with other authors the opinion that excision of the ulcer is not essential provided the antrum is removed, the following policy is adopted: Patients who have uncomplicated ulcer of the anterior wall and patients in whom the ulcer lies posteriorly, but with the duodenum not fixed, transection of the duodenum is performed distal to the ulcer. In those instances in which the ulcer has excavated

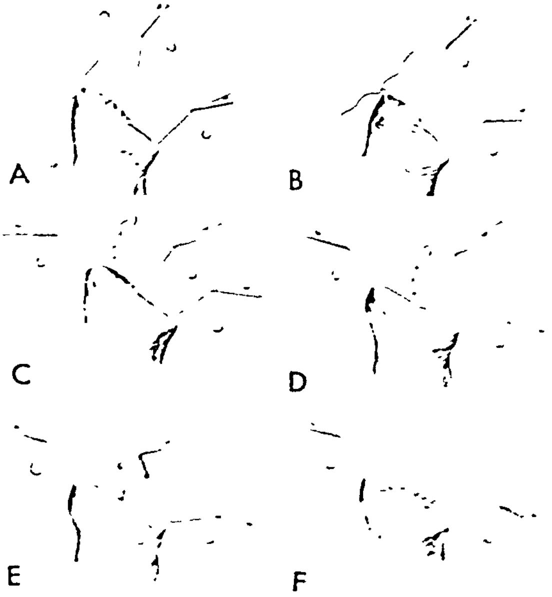

Fig. 2.—*A*, *B*, *C*, *D* and *E*, closure of duodenal stump, commencing from left corner. *F*, a second layer made by interrupted Lembert [illegible] [illegible], [illegible] completing closure.

TABLE 6.—*Complications (308 Cases)*

Type	*No. of Cases*	*Deaths*
Atelectasis	15	0
Lobar pneumonia	13	2
Bronchopneumonia	4	0
Spontaneous pneumothorax	1	0
Pulmonary edema	1	1
Acute pancreatitis	1	0
Evisceration	9	0
Wound adhesions	5	0
Wound infections	10	0
Pelvic abscess	1	0
Gastric hemorrhage	4	1
Rectal bleeding	1	0
Partial stomal obstruction	12	0
Total stomal obstruction	2	0
Volvulus efferent loop	1	0
Leakage of duodenal stump	5	1
Rupture of gastrojejunostomy	1	1

the pancreas and the duodenum is indurated and markedly displaced, transection of the duodenum is accomplished proximal to the lesion and the ulcer is left *in situ.*

It is our opinion that, unless the common duct is intubated as described by Marshall, removal of the ulcer leads to the injury of extrahepatic ducts. On the other hand, transection of the duodenum proximal to the ulcer gives the surgeon the advantage of having the first portion of the duodenum free, with its flexible walls easy to handle. It is our opinion that the removal of the ulcer is mandatory only in those cases in which it gives source to active massive bleeding.

Several methods are available for closure of the duodenal stump. A common one is that described by Parker-Kerr. In the past years there has been developed in this institution a modification of the open technic that has given most gratifying results, which are as follows.

The cut edges of the transected duodenum are grasped with Allis clamps on both edges. With one suture of No. 000 atraumatic chromic catgut with two small curved needles at both ends, the right corner is entered with an inverting mattress stitch. When this suture is tied, the corner is automatically inverted. The suture then continues according to the Connell technic until it reaches the middle portion of the duodenum; then entrance to the left corner is commenced with another suture, which continues in the same fashion until it meets the opposite one. At this point the two sutures are tied together. This constitutes the first suture layer, which ended in the middle of the duodenum with two different strings (Fig. 2*E*). Each string is then carried back across the inverted stump, as are continuous Cushing mattress sutures, and is tied to the end at the opposite corner. This constitutes the second suture layer. The final layer of closure is made by interrupted Lambert stitches of fine black silk. (Closure of the duodenum stump, commencing from the right corner, is shown in Figure 1; closure of the duodenum stump commencing from left corner, in Figure 2.) When the first suture layer is satisfactory, the duodenum is closed with only two layers, the second one being made by interrupted Lambert sutures of fine black silk (Fig. 1). When the closure is not satisfactory, the duodenum is closed in three layers and a piece of gastrocolic omentum secured on the closed stump.

About 70 to 75 per cent of the stomach is resected, according to careful measurement of the greater and lesser curvatures of all specimens. These measurements have given us the amount of stomach removed: 20.03 cm. in the greater curvature, and 10.94 cm. in the lesser curvature in resections done for gastric ulcer; 19.09 cm.

in the greater curvature and 10.12 cm. in the lesser curvature for subtotal gastrectomy done for duodenal ulcer.

Complications.—A list of complications is shown in Table 6.

1. It has been reported by several authors that one of the most frequent causes of postoperative death is peritonitis, caused by leakage from the duodenal stump. Thompson reported, in a series of 399 gastrectomies, 11 cases of duodenal stump dehiscence, in 7 of which the outcome was fatal. Avola of Boston City Hospital, in a series of 621 gastric resections, reported 13 cases of leakage from the duodenal stump, in 10 of which the patients died as a direct result of this complication.

Local factors, such as the application of crushing clamps over the stump to be inverted, the use of inflamed duodenal tissue and impairment of the blood supply to the duodenum, have been incriminated.

Bartlett and Lowell have emphasized the importance of systemic factors, such as anemia, hypoproteinemia and dehydration. "Mechanical factors" are those arising from pressure over the proximal loop, which reverts the increased pressure to the closed duodenal stump, which consequently blows out. Normally, intraduodenal pressure is about 15 cm. of water, and certainly, in this condition, its manometric value must rise considerably. Since we are aware of those factors, it is a policy of this institution, no matter how satisfactorily the duodenal stump can be closed, to place a Penrose drain near it, with the purpose in mind that, should a leakage occur, it could convert this leakage into a duodenal fistula. In our series, leakage occurred 5 times.

The following case demonstrates clearly how mechanical factors played a major role in causing dehiscence of the duodenal stump. It was a case in which the ulcer was excluded; it was penetrating into the pancreas, and no attempt was made to remove it. The patient did well until the fifth postoperative day, when pain and tenderness developed in the right upper abdominal quadrant and profuse bile drainage from the stab wound appeared. Persistent fever (temperature 101-103 F) was also noted. Roentgenograms showed elevation of the right hemidiaphragm. Because of the roentgen report and the persistent fever, an exploratory laparotomy was performed.

At exploration a huge subhepatic abscess, compressing and displacing the proximal loop, was found. The duodenal stump was located and proved to be almost completely opened. The abscess was drained; the duodenal stump was closed, and a small catheter was placed in it and brought out through a stab wound. Electric suction was applied over the catheter. The patient recovered in four weeks, when drainage ceased spontaneously as a result of the release of increased duodenal backward pressure, which had been created originally by the subhepatic abscess.

In 3 cases, as a result of small external duodenal fistulas, healing was spontaneous. In all cases, of course, careful electrolyte and fluid balance were instituted as soon as there was evidence of biliary drainage from the stab wound.

In the other case, the fifth one, the outcome was fatal. The patient had undergone gastroenterostomy elsewhere in 1931, and twenty years later a marginal ulcer developed. The ulcer was at the colonic side. The patient was operated on, and a dismantling of the earlier gastrojejunal anastomosis and subtotal gastrectomy was performed. He did well until four days after the operation, when copious biliary drainage from the stab wound appeared. Because the patient was becoming rapidly depleted despite all supportive measures, an exploratory laparotomy was performed. The duodenal stump was found completely opened; a portion of the afferent loop was attached to itself by dense postoperative adhesions. The stump was closed and the adhesions removed. The patient died, however, fifteen hours after the operation, of pulmonary edema.

2. Pulmonary complications were the most frequent. Thirteen patients had lobar pneumonia, and despite antibiotic therapy 2 of them died of this condition; 15 had atelectasis, but all recovered. In 1 a spontaneous pneumothorax developed thirteen days after the operation, which was treated with closed thoracotomy, with subsequent recovery.

3. There was 1 case of acute pancreatitis, in which icterus, an elevated temperature and an elevation of urine amylase and serum amylase, developed six days after the operation. It is to be pointed out that bile was present in the Levine tube. On the same day there was gastrointestinal bleeding (tarry stools and a large amount of fresh blood in the Levine tube). On the following day an exploratory laparotomy was performed. A hugh hemoperitoneum was located; the gastroenterostomy, for about 3 cm. in length, was explored; no definite sign of bleeding was detected, and the duodenal stump was closed. The hematoma was evacuated; the patient did well postoperatively and, a month later, was discharged fully recovered and completely cleared of icterus. The values for urine and serum amylase were normal.

4. There were 4 cases of postoperative gastric hemorrhage, in 1 case fatal. The patient in this case was operated on for duodenal ulcer, and the ulcer was removed. The hemorrhage occurred at home fourteen days after the operation and was so serious that she went into sudden shock. She was brought to the hospital, and a transfusion was given. On the following day she was operated on, and about 1500 cc. of blood was observed in the abdominal cavity. The gastrojejunostomy was interrupted and inspected for about 3 cm.; two bleeding points were located, which were thought to be responsible, in part, for the shock. Several hours after the operative procedure, there were two episodes of rectal bleeding that caused the patient's death, although several blood transfusions were administered.

5. As another category of complications following subtotal gastrectomy we mention those related directly to the gastrointestinal function. These complications occurred mostly in the earlier years of the group surveyed, at which time a posterior gastrojejunostomy was commonly performed. There were 14 cases of such complications, classified as "stomal obstruction." In 12 cases the obstruction was partial; in 2 it was total. It has been stated by several authors that no actual cause can be demonstrated. In this series, however, all the patients except 1 had undergone posterior anastomosis. We wonder whether the creation of a huge, floating and protruding septum into the gastric remnant could explain, in part, the difficulty in propulsion of the gastric contents into the small bowel, responsible for the stomal dysfunction. All patients recovered with repeated gastric suction, which relieves the obstruction.

There was 1 case of small bowel obstruction. The patient was reoperated on, and a kinking of the efferent loop, due to operative adhesions, was located. The removal of adhesions was enough to correct this disturbance, and the patient recovered.

6. There was 1 case of rectal bleeding. This occurred on the ninth postoperative day, and the patient recovered after being given blood transfusions.

7. There was 1 case of rupture of the gastrojejunostomy. The patient died on the fifth postoperative day of generalized fibrinopurulent peritonitis, confirmed by autopsy.

Results.—A better understanding of the postoperative care associated with proper preparation of the patient and the improvements of modern surgery has brought about a pronounced reduction in the mortality rate associated with subtotal gastrectomy. In this institution the mortality rate for elective subtotal gastrectomy for peptic ulcer has been 1.98 per cent. Up to the time of writing there have been no deaths among more than 90 patients subjected to subtotal gastrectomy. Our results are based upon 303 elective subtotal gastrectomies done either for duodenal or for gastric ulcer. We excluded from this survey patients on whom gastrectomy was done as an emergency procedure for active, massive bleeding, and patients who were operated on for carcinoma of the stomach. Of the 303 cases, the patients in 160 were followed up from two to five years postoperatively, with a percentile follow-up of 52.8 per cent; 143 patients were lost to follow-up, with a percentile of 47.2 per cent. Various authors report that the most distressing sequela in gastrectomized patients is the postgastrectomy or dumping syndrome, which manifests itself by weakness, sweating, nausea and occasional syncope, from fifteen to thirty minutes after a meal.

The incidence of this syndrome is differently reported in the literature. Capper and Butler of London set it at 11.97 per cent in a series of 660 cases; Custer, at 5.6 per cent in one series of 500 cases, and 12.5 per cent in a second series of 112 cases. Rauch reported a 45 per cent incidence in a series of 102 patients; Moore and associates, an incidence of 40.5 per cent with the Billroth I procedure and 44.3 per cent with Billroth II. In our series the incidence of the dumping syndrome was of 17.37 per cent, and the symptoms varied from mild to severe.

As for the relation between gastrectomy and loss of weight, many reports appear in the literature. Moore, Harking and others, comparing a Billroth I and a Billroth II resection, reported that 74.3 per cent of a series of 74 patients in which the Billroth II procedure was performed maintained preoperative weight or gained beyond the preoperative level.

In our series, 72 patients surpassed their preoperative weight, a percentage of 45 per cent. Forty-eight patients (30 per cent) neither gained nor lost weight. Forty patients (25 per cent) lost weight. Of those, 25 (15.62 per cent) had severe loss of weight and 15 (9.47 per cent) mild loss.

The incidence of marginal ulcer in our follow-up was 2.5 per cent.

RIASSUNTO

Viene fatta una rassegna di 303 resezioni gastriche subtotali per ulcera con chiusura del moncone duodenale secondo una tecnica speciale. Vengono anche esaminate le possibilità di asportare l'ulcera o di lasciarla in situ, e i risultati a distanza della cura.

RÉSUMÉ

Les auteurs présentent une étude portant sur 303 cas de gastrectomie subtotale pour ulcère peptique. Une modification de la technique ouverte de fermeture du moignon duodénal est décrite, et les conditions commandant le choix de la méthode à adopter sont discutées.

Pour terminer les auteurs analysent les résultats obtenus.

ZUSAMMENFASSUNG

Die Verfasser besprechen eine Serie von 303 Kranken, an denen eine elektive subtotale Magenresektion wegen Ulcus pepticum ausgeführt wurde. Eine Abwandlung der Technik bei Schliessung des Duodenalstumpfes wird beschrieben. Die Bedingungen, die zur Resektion oder zur Umgehung des Geschwürs den Ausschlag geben, werden erörtert.

Die Behandlungserfolge und Ergebnisse der Kontrolluntersuchungen werden mitgeteilt.

SUMARIO

Apresenta uma revisão de 303 pacientes que foram submetidos a gastrectomia subtotal eletiva para ulcera peptica descrevendo sua modificação do emprego da tecnica aberto para fechamento do côto duodenal. Descreve as indicações para tratamento conservador e cirurgico.

Apresenta tambem os resultados do tratamento e da sequencia dos pacientes.

RESUMEN

Este artículo se refiere a la revisión de 300 enfermos sometidos a gastrectomía por úlcera péptica. Se describe una modificación de la técnica abierta para el cierre del muñón duodenal. Se estudian las condiciones que rigen la decisión entre la resección ulcerosa o el by-pass.

Se termina con la exposición y resultados del tratamiento y su curso ulterior.

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Supervoltage Radiation Therapy of Carcinoma

JUSTIN J. STEIN, M.D., F.A.C.S., F.I.C.S., D.A.B.

LOS ANGELES, CALIFORNIA

FEW discoveries have been heralded by such widespread enthusiasm as was the discovery of "a new kind of rays" by Wilhelm Conrad Röntgen in Würzburg, Germany, on Nov. 8, 1895. In a short time many articles appeared concerning the use of these rays, and, surprisingly enough, articles soon appeared which pointed out the serious reactions and complications following their improper use.

With regard to carcinoma, it is quite possible that there may be no substantial increase in the five-year survival rate as a result of supervoltage and megavoltage therapy.

The value of this type of therapy is that a greater depth dose can be given, there is less cutaneous and osseous reaction, less radiation sickness, and the sick patient can certainly tolerate the treatment more comfortably.

Treatment must be planned and the course of radiation therapy carried out with precision. This may help to improve the end results.

No results of treatment are given in this paper, because only three years have elapsed.

It is quite possible that doses of cobalt 60 radiation, 15 to 25 per cent greater than those given with conventional roentgen therapy, are necessary to produce the same biologic effect. The author has found it necessary to increase the tumor dose, particularly for carcinomas of the head and neck.

The early primitive equipment produced from 50 to 100 Kv. In 1920, after the development of the Coolidge tube, an energy level of 200 Kv. was possible and high voltage therapy was begun, for now it was possible to reach all areas within the body.

In the 1930's, roentgen rays of 400 to 1,000 Kv. were produced, and the name "supervoltage therapy" was given to treatment in this range.

In 1940 Kerst constructed the first orbital electron accelerator to be utilized for therapy. In 1948 this type of therapy unit became available and produced rays with an energy of 22 Mev.

The supervoltage range is generally considered to be from 400 to 3,000 Kv. This range includes the Van de Graaff, cesium, cobalt and one-million and two-million volt resonance generator units.

With the advent of the Kerst betatron unit multimillion-volt units began to appear, and the usual range of kilovoltage was from 22 to 31 Mev. Linear accelerators were designed for kilovoltages from 4,000,000 upward and a synchroton with a kilovoltage of 70,000,000 electron volts is now in experimental medical use.

With the construction and sale of the large multimillion-volt units, a new question arose: What was the ideal or optimum kilovoltage range for the treatment of

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Apresenta uma revisão de 303 pacientes que foram submetidos a gastrectomia subtotal eletiva para ulcera peptica descrevendo sua modificação do emprego da tecnica aberto para fechamento do côto duodenal. Descreve as indicações para tratamento conservador e cirurgico.

Apresenta tambem os resultados do tratamento e da sequencia dos pacientes.

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Este artículo se refiere a la revisión de 300 enfermos sometidos a gastrectomía por úlcera péptica. Se describe una modificación de la técnica abierta para el cierre del muñón duodenal. Se estudian las condiciones que rigen la decisión entre la resección ulcerosa o el by-pass.

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The value of this type of therapy is that a greater depth dose can be given, there is less cutaneous and osseous reaction, less radiation sickness, and the sick patient can certainly tolerate the treatment more comfortably.

Treatment must be planned and the course of radiation therapy carried out with precision. This may help to improve the end results.

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deep-seated carcinomas, both for cure and for palliation? This question has not been answered, but many experienced radiotherapists are convinced that the practical range is somewhere between 1,000,000 and 10,000,000 electron volts. Many studies have been made to measure the relative biologic efficiency (R.B.E.) of the supervoltage and megavoltage units with that of conventional or orthovoltage units. Various tests to measure the relative biological efficiency include ferrous sulphate oxidation, induced lethal mutations in Drosophalia, lethal effects in the chick embryo, reduction in weight of the thymus, testes and spleen in mice, and the whole body radiation effect of the 50 per cent lethal dose in mice.

Paterson and his associates[1] noted that the 50 per cent lethal dose in 30 days in mice for 300 Kv. was 560.7 ± 21.0 rads and for the 4 Mev linear accelerator was 747.04 ± 36 rads. The resultant R.B.E. for rads in tissue was 0.750. The mean R.B.E. for their five experiments was 0.743 ± 0.28 rads.

Taplin,[2] comparing the R.B.E. of the 250 Kv. and CO^{60} units, found the 50 per cent lethal dose for thirty days in mice to be as follows: For cobalt 60, 750 ± 25 rads when given at the rate of 20 r per minute; when conventional 250 Kv. roentgen therapy was used, the dose required was 525 ± 25 rads.

The word "rad" was introduced in 1953 by the International Commission of Radiological Units. It denotes the energy absorbed per unit mass. One rad equals 100 ergs per gram of irradiated tissue, regardless of the kind of irradiation employed. The unit rad, or the absorbed dose, will soon come into more general clinical use, and one should be familiar with its significance.

Modern therapeutic radiology represents an ever-changing progressive attempt to improve technics and equipment and, most important, to attract well-trained persons who know the natural history of disease as it occurs in different parts of the body, and who have the judgment to deal with it properly. The only known methods of successfully eradicating cancer at present are surgical intervention and radiotherapy. Radiotherapists see the majority of patients with malignant tumors at some time during the course of the disease, either in consultation or in treatment for palliative purposes.

Although equipment for radiation therapy is constantly being improved, the important point in deciding where to send the patient is the question "How good is the radiotherapist?" No matter how modern the equipment, the radiation therapy must be properly applied and decisions made as to whether the patient can be cured by this means; the optimum tumor dose for each type of tumor; the complications that may arise, and the care of the patient during therapy and many other factors. The utmost cooperation among the various specialties is essential, and all decisions should be made on the basis of what is best for the patient.

It must be fully understood that ionizing radiation is destructive to the cells of the body, whether the cells are normal or abnormal. To deliver a lethal dose to a carcinoma, one must accept certain calculated risks, since the margin of safety between the tumor and the normal surrounding tissue is very small. Surgeons and other specialists must also expect a certain percentage of complications in the successful treatment of their patients. A greater percentage of complications will occur among patients who have been treated with combined forms of therapy and in whom recurrences have taken place. It is desirable to irradiate only the smallest amount of tissue necessary, but it must be remembered that carcinoma cells do not grow in the form of circles, squares, or rectangles, but extend irregularly and without limiting capsules. If the entire lesion is not treated, if the location of the lesion prevents adequate treatment, or if the lesion is radioresistant, recurrences must be expected. The more complicated the technics used, the greater the danger.

Since the cobalt 60 teletherapy unit is becoming more popular and more widely distributed, a brief discussion of the use of this unit will be given. Cobalt 60 is cobalt 59 made radioactive by neutron bombardment in a nuclear reactor. This may take as long as eighteen months. Cobalt 60 decays with a half-life of five and three-tenths years and in its disintegration produces two gamma ray energies of 1.17 and 1.33 Nev. The radiation beam is monochromatic. The depth dose and isodose distributions are approximately the same as those produced by a roentgen machine operating at a peak energy of 3 Mev. To obtain a cobalt 60 source less than 1 inch (2.5 cm.) in diameter requires a specific activity of above 25 curies per gram. Large diameter sources produce too much penumbra. A properly designed collimator must be used to reduce the penumbra effects.

Since 1946 physicists have been studying the possible use of isotopes, which might be much cheaper than radium. The isotope cobalt 60 has been in use since 1951, and it is increasing in popularity.

Cesium 137, which has a half-life of approximately thirty-three years and a gamma energy of 0.66 Mev, is formed as a fission product resulting usually from the splitting of the uranium isotope 235 by neutron bombardment. Cesium is a waste product of all nuclear piles and should be plentiful. The specific activity will be approximately 25 curies per gram. Cesium 137 should be cheaper than cobalt 60, but the source size will be larger than cobalt 60 and the penumbra larger. Much less shielding will be required for cesium 137.[3] It is doubtful whether Cesium 137 telecurie units will replace roentgen therapy units.

The linear accelerator, the betatron and other megavoltage units will have limited distribution because of the high initial cost, the large amount of shielding needed, the greater space requirements and, for the present, lack of scientific proof of its measurably increased superiority over therapy units up to 3 Mev.

Cobalt 60 therapy has been in clinical use since 1951 in Canada and since 1952 in this country. At present, irradiation is employed, when indicated, for carcinoma of the head and neck, bladder, lung, esophagus, ovary, breast, cervix and uterus in the form of cobalt 60 therapy. Whenever possible, the primary lesion in cases of carcinoma of the cervix is treated by radium. For many carcinomas located as aforementioned it is given postoperatively. Carcinoma of the skin is treated by radium, superficial or high voltage therapy if no operation has been performed. Malignant lymphomas are most often treated with conventional roentgen therapy. The various types of therapeutic equipment should be available, in order that the proper type can be used for the individual case.

From March 1955 to March 1958, in the following cases, carcinoma has been treated by means of cobalt 60:

Location of Carcinoma	*Number of Cases*
Uterine cervix	114
Endometrium	25
Bladder	64
Esophagus	20
Ovary	62
Lung	225

Watson[4] listed cases of malignant tumor treated by radiotherapy at the Saskatoon

Cancer Clinic from 1952 to 1956. The following methods were employed:

Method	*Patients Treated, %*
CO^{60}	32
Betatron	4
400 KV.	1
200-280 Kv.	19
140 Kv.	21
Radium, etc.	23

The therapeutic advantages of cobalt 60, and of all supervoltage and megavoltage units, are as follows:

1. There is an increased depth dose.
2. The volume of irradiated tissue is less, owing to a decrease in lateral scatter, *with a more sharply defined beam.*
3. The maximum point of ionization in the tissue for cobalt 60 is approximately 6 mm. below the skin (deeper for the higher megavoltages). This produces much less cutaneous effect. Daily doses of 300 r to the skin of cobalt 60 up to 4,000 r will produce little cutaneous change. Skin doses of 6,000 r in four weeks have not produced moist desquamation of the skin.
4. There is little need for rotational therapy. Fixed field therapy is usually adequate.
5. There is usually a decrease in radiation sickness, probably because of the smaller volume of tissue irradiated.
6. There is decreased absorption of the radiation by bone as compared to soft tissue. This is a definite advantage in the irradiation of carcinoma of the head and neck.
7. Increased tumor doses can be given in less time than with conventional therapy.
8. The irradiation is better tolerated by most patients than is the conventional type.
9. Patients can tolerate tumor doses of from 1,000 to 1,500 r per week for total tumor doses of 5,000 r to the pelvis and tumor doses of 6,500 to 9,000 r to the region of the oral cavity.

The advantages listed for cobalt 60 and with the higher voltage units have been observed by many radiotherapists, as well as in my own experience of three and one-half years with cobalt 60 therapy.

From a purely clinical standpoint, on the basis of close observation of the effects of cobalt 60 therapy on the mucosa and of its effect on tumors, it is my opinion that one must give from 15 to 25 per cent more cobalt 60 therapy than conventional radiation therapy to produce the same end result. Even if one did not improve the five-year results over those of conventional therapy, however, the value of supervolt*age and megavoltage therapy for deep*-seated carcinoma has been proved, because patients tolerate this therapy so well; the ease of administration, the sparing of the skin and the increased depth dose. Sufficient information has accumulated to indicate that the five-year successful results will at least equal those of conventional roentgen therapy.

Brief comment only will be made on the use of supervoltage therapy for carcinomas of certain parts of the body.

Carcinoma of the Head and Neck.—Carcinoma of the head and neck and malignant tumor of the brain are best treated by means of the higher energy beam and for the reasons aforementioned. Occasionally it has been found desirable to give one-half to two-thirds of the tumor dose with cobalt 60 in certain cases of carcinoma of the head and neck, follow with radium needles or radon seeds for the remainder of the dose. Bone, cartilage and skin reactions have been at a minimum. A tumor dose of approximately 6,000 r to 8,500 r, delivered in four to six weeks, is given.

Carcinoma of the Breast.—Cobalt 60 therapy is used postoperatively after simple or radical mastectomy for mammary carcinoma. The mediastinal, axillary, supraclavicular and infraclavicular regions are treated by means of anterior and posterior opposing fields. A tumor dose of approximately 5,000 r is given.

Since in more than 10 per cent of carcinomas of the breast the internal mammary lymph nodes are involved, without other evidence of metastasis, and in approximately 35 per cent of the cases in which the axillary lymph nodes are involved the internal mammary lymph nodes contain metastatic disease, routine postoperative irradiation is certainly in order. Probably for the majority of patients with carcinoma of the breast the routine radical mastectomy will be inadequate, because of the involvement of either internal mammary or supraclavicular lymph nodes, or both.[5]

Carcinoma of the Cervix.—The usual procedure in the treatment of cervical carcinoma is to use both radium and roentgen rays. The cervix, the uterus and the upper third of the vagina can tolerate a large amount of radiation. Radium is considered preferable for treatment of the primary lesion; roentgen therapy is necessary to increase the tumor dose in the lateral pelvic areas.

Approximately 6,500 to 7,000 gamma roentgens are given to point A, which is estimated to be 2 cm. above the cervical os and 2 cm. lateral to the midline of the uterus. Point B is 3 cm. lateral to point A. About one-third of the tumor dose given to point A will reach point B; therefore, it is necessary to supplement the dose at point B by a tumor dose of 2,500 to 3,000 r from external irradiation. Cobalt 60 therapy has been used entirely for this. No additional radiation is given to point A. The total tumor dose at point B will be be about 5,000 r.

If the carcinoma recurs and at least six months has elapsed since the previous therapy, the entire pelvis is irradiated by means of cobalt 60 and a midpelvic dose between 4,000 r and 5,000 r is given. I have done this many times for recurrent carcinoma after one or more years had elapsed since conventional roentgen therapy was given. Some of the preliminary results have been highly satisfactory, and no unusual complications have occurred.

There has been a gradual decrease in the mortality rate associated with cervical carcinoma. This may be accounted for by a decrease in the incidence of the disease and by improved therapy. The five-year survival rates for carcinoma in selected sites, as reported from the Connecticut State Department of Health, are as follows:

	Cervix Uteri, %	*Corpus Uteri,* %
1935-1940	35	48
1941-1946	43	59
1947-1951	53	62

These figures are, in general, representative of those recorded for the uterus from 1935 to 1951.[6]

Carcinoma of the Corpus Uteri.—Carcinoma of the uterine corpus is generally treated by preoperative irradiation, followed by hysterectomy and bilateral salpingo-oophorectomy in six weeks. The preoperative irradiation is probably of the greatest value when the uterus is large and the malignancy of the tumor is high.[7] It is difficult to prove the value of irradiation for a patient with a small uterus and a tumor of low malignancy. If extension has occurred beyond the uterus, cobalt 60 therapy is given.

Carcinoma of the Ovary.—Ovarian malignant tumors are best treated by surgical intervention. Unfortunately, in many patients the disease is no longer localized and cannot be completely removed.

Irradiation therapy with cobalt 60 is given to all patients when the growth cannot be removed in its entirety. Although the results are generally poor in patients with extensive disease, surprisingly good palliative results are obtained at times, and no one can determine in advance which tumors will respond and which will not. The patients may be reoperated on after irradiation, with additional palliation for many months.

Taylor[8] has reviewed some of the surgical statistics on five-year cures of ovarian carcinoma, noting that many estimates vary from 20.6 to 30 per cent between 1949 and 1955. Some patients with localized low-grade tumors, however, will have a very good chance to survive many years after the operation. Elkins[9] noted from reports in the literature that the percentile five-year survival figures, when both operation and radiation therapy were used, varied from 22.5 to 53.

For extensive lesions I treat the pelvis and abdomen, including the para-aortic lymph nodes, and give a tumor dose of approximately 4,000 r, using cobalt 60.

Holme,[10] reporting the results in 207 cases of malignant ovarian tumor treated by operation only, stated that 23 per cent of the patients survived; in 145 cases in which operation and radiation therapy were combined, 39 per cent, and in 15 cases treated by radiation therapy only, 20 per cent.

Carcinoma of the Lung.—Since February 1955, 225 patients with carcinoma of the lung have been treated with cobalt 60 therapy. All have been examined by thoracic surgeons, and many have had lobectomy and pneumonectomy in an attempt to eradicate the disease.

In 1938 I reported on a series of patients with pulmonary carcinoma who were inoperable and were given moderate tumor doses of conventional roentgen therapy. There was an increase in the survival period and the patients were clinically improved; less coughing, fever and chills, and there was an increase in strength.[11]

Tumor doses of 5,000 to 7,000 r are being given to the current series of patients who have disease localized to the chest, with cobalt 60 therapy, in an effort to see whether the cure rate can be increased and palliation improved. Some of the responses have been very good. One cannot predict which patient will and which will not respond. Several have been for two years in good condition and symptom free. Definite palliation has been produced in the majority.

Carcinoma of the Bladder.—Carcinoma of the urinary bladder has been treated with cobalt 60 therapy with tumor doses between 5,000 and 6,000 r in four to six weeks. The results were much better than was anticipated. The discomfort to the patient is minimal, and fibrosis and contracture of the bladder have occurred infrequently up to the time of writing.

Complications of Cobalt 60 Therapy.—The complications associated with cobalt 60 therapy during these three years of experience have been minimal, and so far I have not encountered fibrosis of the subcutaneous tissues. In the tumor dose range given, no perforations have occurred from the gastrointestinal tract. The pharyngitis, esophagitis, colitis and cystitis that have occurred when treatments were directed to those areas have been mild and have responded readily to medication.

ZUSAMMENFASSUNG

Es ist durchaus möglich, dass die Behandlung des Krebses mit Röntgenbestrahlungen von hohen und äusserst hohen Spannungen nicht zu einer Erhöhung der fünfjährigen Überlebensquote führt. Der Wert dieser Form der Behandlung liegt in der Möglichkeit, grössere Tiefendosen zu verabfolgen, geringere Haut- und

Knochenreaktionen auszulösen, den Röntgenkater herabzusetzen und dem leidenden Kranken die Behandlung erträglicher zu machen.

Die Bestrahlungen müssen sorgfältig geplant und mit Genauigkeit ausgeführt werden. Dies kann zu einer Verbesserung der Endergebnisse beitragen.

In der vorliegenden Arbeit werden keine Angaben über die Behandlungsresultate gemacht, weil erst drei Jahre seit ihrer Durchführung verstrichen sind.

Es ist sehr leicht möglich, dass bei der Strahlenbehandlung mit radioaktivem Kobalt 15 bis 25 Prozent höhere Dosen als bei Anwendung der konventionellen Bestrahlungstechnik gegeben werden müssen, um den gleichen biologischen Effekt zu erzielen. Der Verfasser hat es für notwendig befunden, besonders bei Krebsen des Kopfes und des Halses die Tumordosis zu erhöhen.

RÉSUMÉ

Il est fort possible, pour ce qui est du carcinome, que la thérapeutique de surdosage (ou de mégavoltage) n'ait pas pour conséquence une augmentation substantielle du taux de survie de 5 ans. Mais la valeur de ce traitement réside dans le fait qu'il permet l'administration de doses plus pénétrantes avec une meilleure tolérance (diminution des réactions générales, cutanées et osseuses).

La thérapeutique doit être bien étudiée au préalable et appliquée avec une grande précision en vue d'améliorer ses effects. L'auteur ne la pratiquant que depuis trois ans juge prématuré d'exposer ici ses résultats. Il a jugé utile d'augmenter les doses habituelles en particulier pour les carcinomes de la tête et du cou (doses de cobalt de 60 r 15 à 25% plus élevées que celles de la roentgenthérapie classique pour le même effet biologique).

RESUMEN

La radioterapia con supervoltaje y megavoltaje no parece mejorar sensiblemente la supervivencia del cancer por encima de los 5 años. El valor de esta forma de terapia está en que se alcanzan dosis mayores en profundidad mientras que los efectos de la radiación de la piel, tejdo óseo y en el organismo en general son mucho menores; además el enfermo débil soporta muy bien el tratamiento.

Para obtener buenos resultados hay que planear con precisión la pauta del tratamiento y de las sesiones. El artículo no publica resultados pues sólo han pasado 3 años desde la puesta en práctica de esta técnica.

La terapia con cobalto radiactivo (Co 60) requiere seguramente dosis entre un 15 y un 25% más altas que las usadas en la radioterapia corriente. El autor cree que debe aumentarse la dósis tumor, sobre todo cuando se trata de carcinomas de cabeza o cuello.

SUMARIO

Acha que, não houve substancial aumento na taxa de sobrevida de cinco anos como resultado da terapeutica de super e maga-voltagem no carcinoma. O valor dêsse tratamento está no dose de maior profundidade, menor reação cutânea e ossea, menor disturbio pós-irradiação alem de que o paciente poderá tolerar o tratamento com mais conforto. A melhoria dos resultados pode ser obtida com um bom planejamento da terapeutica pela irradiação. Nesta comunicação o A. não fornece resultados, porque decorreram apenas 3 anos. É possivel que dosagens convencionais 15 a 25% mais fortes são necessarias para obter os mesmos efeitos biologicos do cobalto 60.0 A. acha que é necessario aumentar a dose tumor particularmente para os carcinomas da cabeça e do pescoço.

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Mark Twain once remarked that clues in a murder case were all right, but you can't hang clues. Perhaps we might paraphrase this by saying that you can't treat diagnoses. No, but just as clues lead to capture, so diagnoses indicate diseases. and the physician cannot treat a disease intelligently until he recognizes it.

So, when a patient consults his physician, the physician employs his five senses. Some physicians, like Dr. Bell, who was the original of Sherlock Holmes, have trained their powers of observation to such an extent that their shrewd deductions seem uncanny. But even the average physician has been so trained that it becomes second nature to notice the pupils of the eyes and the colour of the skin, to note how patients walk and whether they puff on exercising.

A few years ago a physician was a member of a delegation which called upon a prominent public official who had the reputation of being a brilliant and successful executive. After the interview the various members of the delegation were praising him and describing him as "brilliant," "driving," "full of imagination," and a "genius." The physician was then asked his opinion. "What struck me first," he answered, "was that the man's right pupil was about three times as large as the left, and that when he faced the light, neither pupil contracted. That man is not a genius, he's simply losing his mind." And he was. Two months later he was admitted to a hospital for the insane.

—*Major*

Secondary Excision of War Wounds

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APO 56, INDIA

DURING the second World War I had to deal with a considerable number of battle casualties amidst prisoners of war of four nationalities, namely, Eritreans, Abyssinians, Italians and Germans, while the battles raged in the Middle East theatre and later extended across the Mediterranean to Sicily and Italy. These prisoners were, naturally, picked up late from the battlefields and then evacuated to the advance hospital where I worked as a surgical specialist. Whereas our own casualties could be collected early and brought to surgical teams within twenty-four hours of their being wounded, so that primary excision of the wounds was possible, the same was not true of prisoners of war, who as a rule were collected late, after the day's fighting was over and the enemy had receded, leaving behind its wounded in the field.

Primary excision of war wounds is an accepted principle and has gone a long way toward reducing the mortality rate and saving limbs, but it must be carried out before the wound becomes infected; that is, twenty-four hours, at latest, after infliction of the wounds. Attempts to excise the wound after twenty-four hours resulted in spread of infection and general septicemia. The consensus, therefore, was that it should be given up and done as a substitute debridement. Debridement simply implies enlargement of the wound in order to effect free drainage, combined with rapid removal of foreign bodies and obviously dead tissue.

Faced with the problem of a large number of war wounds that had passed the period suitable for primary excision, I developed the technic of "secondary excision," by which the wounds could be successfully excised without spread of infection or septicemia and giving the patient benefits equivalent to those of primary excision.

Definition of Secondary Excision.—Secondary excision is excision of a wound that is infected, as against primary excision, which is excision of a wound before infection sets in. Thus, secondary excision applies to wounds more than twenty-four hours old.

Rationale of Secondary Excision.—The object of secondary excision is to remove all dead tissue from a wound. The bulk of dead tissue consists of muscle, which is destroyed by the explosive effect of a bullet at the exit wound or by pieces of bombs, shrapnel, etc. These wounds are wide and gaping and contain a considerable amount of dead muscle tissue. The muscle tissue that is still alive is limp and inactive. Infection of these wounds soon occurs because of indriven foreign bodies and pieces of clothing, and the bacteria multiply vigorously in the dead muscle, which forms an ideal medium, providing multitudes of dead spaces and crevices, the more because of the inactive condition even of the living muscles. These wounds, if treated by simple drainage and dressing, take a long time to heal and then do so with the formation of large adherent scars and keloid tissue. If bones are broken as well, the healing is delayed even further because of chronic osteomyelitis, which in some cases may cause a

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discharge of pus on the surface for an indefinite time.

When secondary excision is performed the wounds heal rapidly, with soft pliable scars, and no keloid forms. In a compound fracture the bones unite without the risk of osteomyelitis. Lastly, gas gangrene, tetanus and secondary hemorrhage, which are dreaded complications of infected wounds, are done away with by secondary excision, and the surgeon need worry no further.

Cause of Failure of Secondary Excision.—In spite of the great advantages offered by secondary excision, surgeons met with disaster when they attempted it in the past. I assign two main causes to this failure: first, lack of preparation of the wound prior to secondary excision and, second, errors in technic.

I should like to emphasize the fact that the preliminary treatment of these infected wounds is essential, in order to eliminate the activity of such virulent bacteria as Streptococcus haemolyticus. There should be no hurry in performing secondary excision; one should wait until it is ascertained that acute infection of the wound has subsided. The general condition of the patient and the local condition of the wound can, generally speaking, be relied upon to indicate whether or not the infection is quiescent. If there is doubt, a bacteriologic examination of the wound can be made by swab and culture.

With regard to the technic of excision, another precaution: It is definitely incorrect to cut through dead and infected tissue, for it leads to absorption of toxins and bacteria into blood, and septicemia

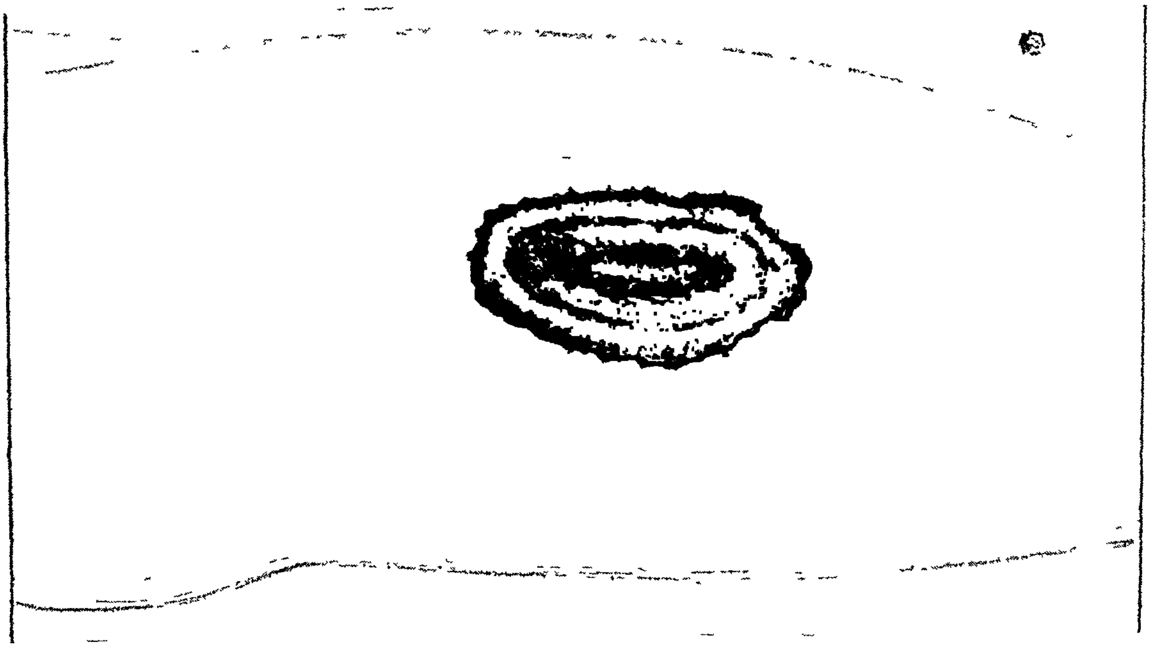

Fig. 1.—Explosive effect on exit wound caused by rifle bullet. Wound, more than twenty-four hours old, has passed stage for primary excision. Extensive damage of muscles with infection supervening, if treated by debridement or conservatively, has inherent dangers of gas-gangrene, tetanus and secondary hemorrhage in the early stages; and, later would go on to protracted healing with formation of large adherent scar and keloid. The inset shows the wound of entry, on the inner aspect of thigh.

may result. At the same time, local spread of infection may occur.

The aim of secondary excision is to cut through healthy tissue, thereby removing the dead tissue together with a margin of healthy tissue. For this purpose the dead tissues need to be demarcated from the healthy parts. This is accomplished by my technic for this procedure.

It may be noted that, whereas in fresh wounds all the layers, from the skin to the very depths, are distinct and separate, the same is not true of old wounds, in which all the layers are matted together. Pathologic study of the wound would clarify this point even further. The wall of an old wound has the edge of the skin, the superficial and deep fascia and the superficial and deep muscles all bound into one mass. The inner layer of this mass contains infected, dead and devitalized tissue that slowly liquefies into slough and pus and is discharged into the wound. The lateral layer of the mass abuts on the healthy tissues of the body, and a line of demarcation, with mild sepsis, forms where the dead tissue is undergoing the process of absorption, separation and fibrous tissue formation. Further, the edge of the skin is the portion of least destruction, but in the depth of the wound the thickness of the dead muscle mass may be considerable. The excision of a late wound thus requires a fine technical skill and much patience, as otherwise disaster may result.

Technic.—The three steps of secondary excision by my method are (1) preparation of the wound; (2) excision of the wound, and (3) aftertreatment.

Preparation of the Wound: As a rule, I have treated these wounds by Carrel-Dakin's irrigation, carried on for forty-eight hours. The part was kept elevated and resuscitation measures instituted to improve the general condition of the patient. A course of chemotherapy was invariably given. Antibiotics were not available at that time but should be used liberally in the future. Carrel-Dakin's irrigation proved excellent in reducing the infection, and in the majority of cases just forty-eight hours of treatment sufficed; if not, it was continued for a few more days. By this means all the spaces and crevices of the wound could be drained, which cannot be done so well by any other method. As an alternative, however, and for minor wounds, washing with hydrogen peroxide, hot foments and frequent antiseptic dressings gave good results.

> *War wounds that are brought for treatment twenty-four hours after their infliction have passed the period for primary excision. They should be treated by "secondary excision" as here described.*
>
> *The main steps are as follows:*
>
> *1. Preparation of the wound by Carrel-Dakin's irrigation.*
>
> *2. Excision as described, with preservation of the skin to the maximum extent possible and liberal excision of muscle through healthy parts.*
>
> *3. Mobilization of the skin by undercutting and suture over the wound, either partially or completely. Apart from the skin, the muscles and fascia in the depths of the wound are not opposed, and no buried sutures are left except the small knots that tie the bleeding vessels.*
>
> *After excision of the wound, in a case of compound fracture, the skin is sutured at either end only, the central portion being left open to drain the fracture site. The fracture is treated either by skeletal traction (femur) or immobilization in plaster of paris.*

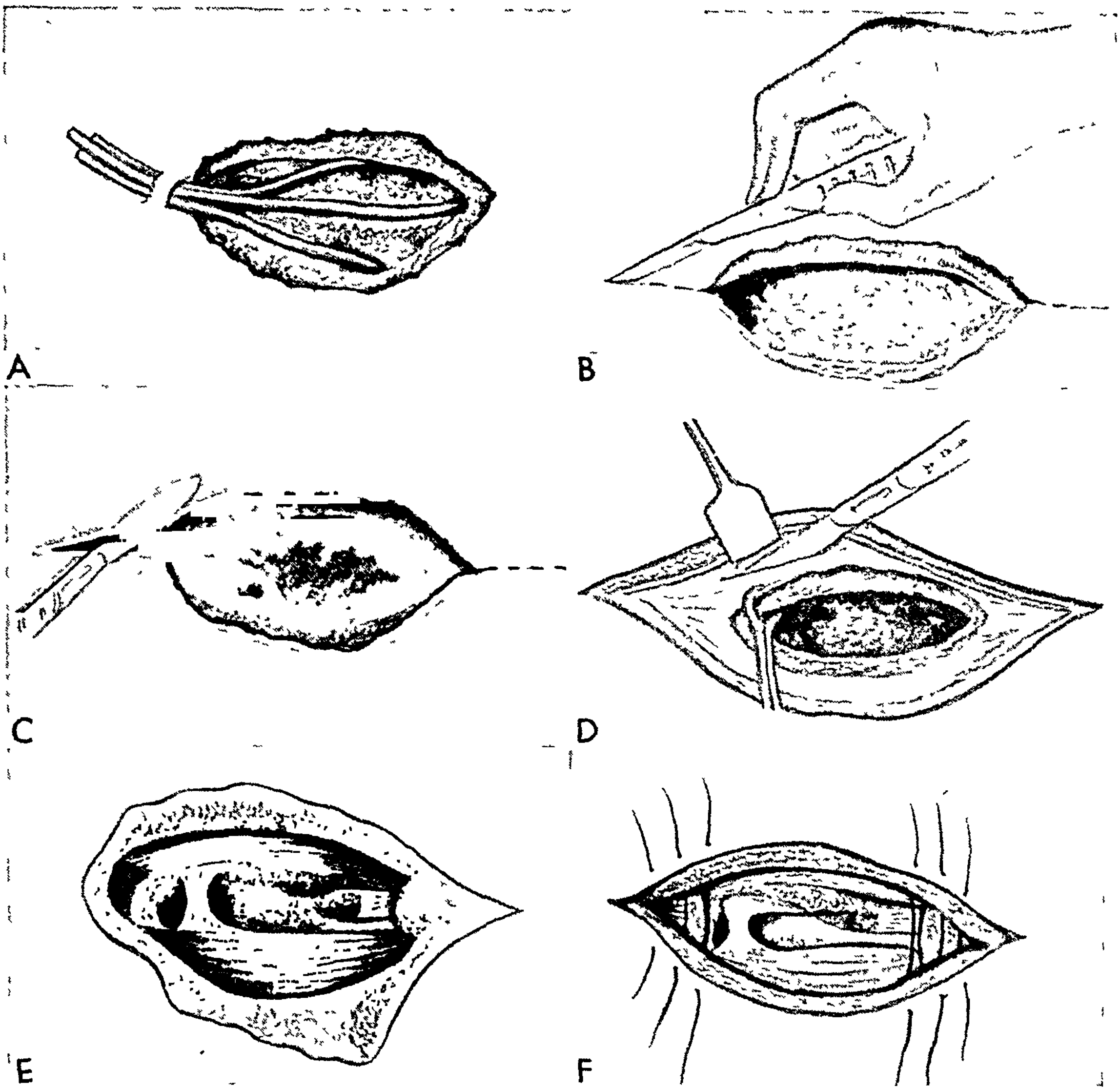

Fig. 2.—*A*, preparation of infected wound for secondary excision; Carrel-Dakin irrigation. *B*, first step of secondary excision by author's technic: Skin is incised at either end of wound to expose healthy subcutaneous tissue in order to provide bearing for next step. *C*, second step: Blade of knife is inserted in subcutaneous tissue and advanced toward edge of wound to detach skin all round without sacrificing any part of it. *D*, third step: Dead tissues are excised by cutting through healthy muscles. Nonobservance of this precaution may lead to septicemia or local spread of infection. *E*, fourth step: Dead tissues have been excised all round and down to depth of wound. Note healthy appearance of muscles. *F*, fifth step: Partial closure of the wound at either end. Note that no buried sutures are left since no fascia or muscle are approximated.

Excision of the Wound: Excision of the wound is undertaken with all aseptic precautions. The surrounding skin is painted with iodine, and sterile towels are placed all round. The actual wound is touched with pure carbolic acid, followed by spirit, and then wiped clean with dry gauze. The skin is incised at either end of the wound in its long axis till healthy subcutaneous tissue is exposed. The blade of the knife is then inserted into the subcutaneous tissue and advanced toward the edge of the wound. Working the blade outward toward the edge of the wound, enables one to detach the skin easily from the wound all round, without sacrificing any portion of it. After detachment of the skin the wound margin will feel hard over an area corresponding to that part of it which is composed of dead tissue, which lateral to it the feel of healthy tissue will be evident. The excision of the dead tissue is begun by cutting through the healthy tissues all round and, as far as possible, continuously, in order to cut out the wound track. In a deep wound it is better to excise the superficial layers first and then expose the deeper layers of the dead mass by retracting the superficial muscle layer. In case bone is fractured as well, only the loose pieces are removed. Any embedded foreign bodies, or bits of indriven clothing or old blood clots are removed.

The excision of the affected muscles is done liberally, for, apart from removing all traces of infection, which dwells particularly in muscles, it reduces the size of the wound and makes it possible to close the skin without tension. Liberal removal of muscles in their long axis causes little disability, as the loss is soon compensated, but muscles must not be cut transversely. The deep fascia and the fascia coverings of muscles are all incised in their longitudinal axis, as a rule. It need hardly be added that sound anatomic knowledge is essential in avoiding damage to important vessels and nerves during incision. While excision is being done, the healthy muscles bleed freely, but each bleeding point should be ligated. The edge of the skin is only trimmed, for undue sacrifice of it is unwarranted. Finally, the excised wound is cleaned with hydrogen peroxide and then irrigated with acreflavine solution (1 : 1,000). The wound is now ready for the next step, for which gloves are changed, fresh towels applied and fresh instruments used.

The next step is closure of the skin. In my experience, partial closure of the skin at either end of the wound must always be done. For this purpose the skin should be loosened by undercutting. Complete closure of the skin may be carried out in flesh wounds only, and only if, after the excision, the wound looks very clean. With complete closure of the skin, drainage tubes must be inserted at either end and the patient kept under strict observation for spread of infection; should this occur, the stitches should be cut out without delay. In those cases in which the incision has not been satisfactory it is advisable to pack the wound and leave it completely open, with secondary suture after a few days. In cases of compound fracture the central portion of the wound is always left open for drainage.

Partial closure of the wound at either end, after excision, offers great advantages. It reduces the size of the wound, obliterates potential spaces where oozing blood may collect and form a nidus for multiplication of bacteria, and it also controls hemorrhage. Furthermore, muscles deprived of the warmth and protection of their cutaneous covering tend to become edematous, infected and necrotic and thus would vitiate the result of the operation should the skin not be sutured at least partially.

It should be noted that approximation of muscles and fascia by suture is not permitted, for fear of leaving buried sutures that would cause infection.

Aftertreatment.—The aftertreatment of flesh wounds is simple, for they heal rapidly. When there has been much loss of skin, skin grafting should be done as soon as the wound is ready for it.

The aftertreatment of compound fractures is as follows:

1. *Plaster immobilization.* After excision, the skin is closed at either end of the wound, while in the central portion

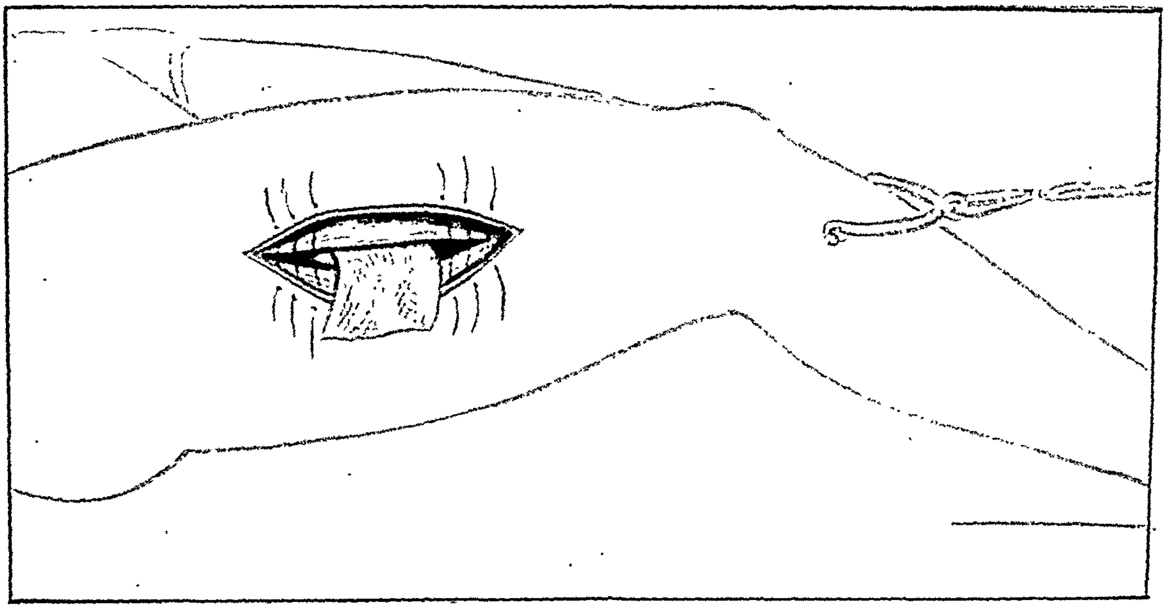

Fig. 3.—Sixth step: In compound femoral fracture the wound is only partially closed at either end by approximation of skin; petrolatum gauze plug is inserted to drain fracture site. Fracture is treated by skeletal traction on a Braun splint. This facilitates daily dressings of wound, which heals in four to six weeks while fracture becomes progressively consolidated.

petrolatum gauze is plugged in for drainage of the fracture site. Petrolatum gauze is wrapped liberally around the limb over the wound and for a certain distance above and below it. Plaster of paris is then applied to immobilize the fracture, after it has been ascertained that the fragments are in apposition. The plaster cast is renewed after about three weeks, when the skin sutures are removed. Renewal of the plaster cast is continued until bony union is complete. The wound has been observed to heal in six weeks.

With compound fracture of the forearm some patients find it difficult to withstand the smell of closed plaster treatment, especially in tropical climate. Since frequent changes of plaster may disturb the alignment of the fragments, the method I adopted was to open a window in the plaster at the site of the wound and dress the wound daily. The petrolatum gauze wrapped liberally round the wound and above and below it served to prevent the development of edema in the wound after a window had been opened in the plaster.

2. *Skeletal traction.* For fracture of femur plaster immobilization was not employed because, first, it was difficult to keep the fragments opposed, and second, the discharge from the wound soon soaked the plaster in the initial stages, when it was inadvisable to change the plaster for fear of disturbing the alignment of the fragments. Fractures of the femur were, therefore, invariably treated by Steinmann's pin traction applied through the tubercle of the tibia.

Compound factures of the femur were evacuated from the front lines on Thomas' splint, which was kept in position by what is known as Tobruk Plaster. In such a case Carrel-Dakin's irrigation was used while the patient was still on Thomas' splint. Later, secondary excision of the wound was performed after the passage of a Steinmann pin through the tibia, to which a stirrup with a piece of rope was attached for pulling by an assistant, in order to keep the fragments steady and prevent laceration of blood vessels during excision of the wound. After secondary excision and partial closure of the skin at either end, the central portion of the wound was plugged with petrolatum gauze for drainage, and then the fracture was treated by skeletal traction on a Braun splint. The wound was dressed daily. Healing took place in about six weeks. The fracture showed good union in ten weeks. Skeletal traction was maintained for six weeks, with smaller amounts of weight in the later stages, and was replaced by skin traction after six weeks. After three to four weeks of skeletal traction, however, plaster of paris could be applied if the patient was required to be evacuated down the line to a base hospital.

Results.—Flesh Wounds: In 1941 I performed a series of 50 secondary excisions with complete suture of the skin, the time being ten to twenty days after infliction of the wound. In 70 per cent healing occurred by primary intention. In the remaining 30 per cent the stitches gave way because of tension and the wound burst to a distance of ½ inch to 1½ inches (1.2 to 3.7 cm.). The burst wound, however, healed rapidly, and the results obtained showed that the labor was well spent; a thin and pliable scar resulted in each case, without the risk of keloid formation or disfigurement due to big adherent scars. Wounds as large as 7 by 2½ to 3 inches (17.5 by 6.2 to 7.5 cm.) were successfully sutured. In 1943, in another theater of war, 30 cases were dealt with in the same way and similar results obtained. Apart from these, in a fair number of cases local gas gangrene infection had developed; these wounds were excised immediately as an emergency operation, and then delayed suture of the skin was performed. There was also a considerable number of large irregular wounds in which, after excision, the skin was opposed in parts and patches. In these the uncovered parts of wounds filled up by granulation and required skin grafting. I performed secondary excision and suture up to twenty-eight days after infliction of the wound, after which it was considered unnecessary.

By way of experiment, a few blown-off wounds were excised and left open in their whole extent, packed with petrolatum gauze and encased in plaster of paris. These wounds remained clean but healed very slowly and needed skin grafting.

Simple perforating wounds caused by a long range bullet with a small entrance and a small exit wound were not excised, as they tended to heal spontaneously, but otherwise all wounds with a large exit or a large entrance and exit wounds or blown-off wounds were subjected to excision.

Compound Fractures: In these cases, secondary excision of the wound with partial suture of the skin at either end produced miraculous results, for the wounds healed in four to six weeks, while the fracture was immobilized in plaster or treated by skeletal traction. The fracture united normally, and the convalescence was not prolonged. In cases in which excision was not performed, chronic osteomyelitis and an infected wound tract showed discharging sinuses for a year or more.

CONCLUSIONS

After evaluating the results of secondary excision, I have concluded that "where there is dead tissue, cut it out" should be considered as good an aphorism as "where there is pus, let it out."

Secondary excision of war wounds will have wide applicability in nuclear warfare, when mass casualties will be produced and primary excision will not be possible for most of them. With my technic, secondary excision can be carried out with safety, thus preventing the formation of keloids and large adherent scars and also the formation of indefinitely discharging sinuses. Finally, convalescence will be considerably shortened.

RÉSUMÉ

Les plaies de guerre traitées 24 heures après et ayant de ce fait dépassé le stade l'excision primaire, devraient être soignées par "excision secondaire," selon la méthode de l'auteur.

L' "excision secondaire" comprend les principaux temps suivants:

1. Préparation de la plaie par irrigation au liquide de Carrel-Dakin.
2. Excision de la plaie selon la technique de l'auteur, qui comporte le ménagement au maximum de la peau alors que les muscles sont largement excisés à travers les parties saines.
3. Incision et mobilisation de la peau et suture partielle ou complète pardessus la plaie. Les muscles et le fascia du fond de la plaie ne sont pas rapprochés, et il ne reste aucune suture enfouie à part les petits noeuds ligaturant les vaisseaux sanguins.

Dans les cas de fractures compliquées et après excision de la plaie, la peau est suturée à une extrémité seulement, alors que la partie centrale est laissée ouverte pour permettre le drainage au nive au de la fracture. La fracture est traitée soit par traction osseuse comme pour le fémur, soit par immobilisation plâtrée.

RESUMEN

Las heridas de guerra cuyo tratamiento haya de comenzarse después de veinticuatro horas, cuando ha pasado ya el periodo de "excisión primaria," deben ser tratadas por "excisión secundaria" en la forma propuesta por el autor.

Los puntos fundamentales de la "excisión secundaria" son:

1. Preparación de la herida por irrigación con líquido Carrel-Dakin.
2. Excisión de la herida en la siguiente forma: conservación máxima de la piel excindiendo en cambio ampliamente hastatejido sano las partes blandaes subyàcentes.
3. Movilización amplia de la piel por despegamiento subcutáneo suturándola después sobre la herida. Por el contrario los músculos y fascias no son suturados con lo que no se deja ningún punto enterrado salvo los indispensables de las ligaduras vasculares.

En los casos de fractura compleja una vez excindida la herida se sutura la piel dejando un pequeño hueco para un tubo de drenaje. Después se inmoviliza la fractura con extensión o vendaje enyesado.

ZUSAMMENFASSUNG

Kriegswunden, die erst 24 Stunden nach erfolgter Verletzung zur Behandlung gebracht werden und dadurch den Zeitpunkt für eine primäre Exzision versäumt haben, sollten nach dem vom Verfasser angegebenen Verfahren der "sekundären Exzision" behandelt werden.

Die wesentlichen auszuführenden Schritte bei diesem Verfahren sind die folgenden:

1. Vorbereitung der Wunde mit Carrel-Dakinscher Ausspülung.
2. Ausschneidung der Wunde nach dem vom Verfasser angegebenen Verfahren, wobei soviel Haut wie nur irgend möglich gerettet wird, während die Muskeln durch die gesunden Teile hindurch grosszügig ausgeschnitten werden.
3. Mobilisierung der Haut, die durch Unterschneidung losgelöst und entweder über einen Teil oder über die gesamte Ausdehnung der Wunde zusammengenäht wird. Die Muskeln und Faszien in der Tiefe der Wunde

werden nicht zusammengebracht, und ausser den kleinen die blutenden Gefässe verschliessenden Knoten werden keine Nähte in der Tiefe zurückgelassen.

Bei komplizierten Brüchen wird die Haut nach Herausschneidung der Wunde nur an den beiden Enden genäht, während der mittlere Abschnitt zur Drainierung der Frakturstelle offen gelassen wird. Der Bruch wird entweder wie im Falle einer Oberschenkelfraktur durch Knochenzug oder durch Ruhigstellung im Gipsverband behandelt.

SUMARIO

O A. declara que as feridas de guerra que chegam para tratamento depois de 24 horas devem ser tratadas por excisão secundaria. Descreve os seguintes tempos da excisão secundaria:

1. Preparação da ferida por irrigação Carrel-Dakin.
2. Ex cisão cutanea economica porem estirpação muscular em area limite das partes sãs, conforme esquema do A.
3. Mobilização da pele por descolamento com sutura total ou parcial. Não sutura muculos nem fascia e não usa suturas na profundidade esceto para ligaduras.

Nas fraturas expostas depois da escisão da ferida sutura a pele somente nas extremidades, deixando o centro aberto para drenagem. A fratura é tratada por tração esquelética como no caso do femur ou por imobilização gessada.

. . . A scientist must learn that it is not enough to make a great discovery. He must teach mankind to apply it to their own betterment. And that task is often far more difficult than the actual search for truth.

As a martyr to the world's stupidity, Semmelweis is one of the great tragic figures of all history. As a man and a scientist, his memory is glorious. In his own time innumerable lives were saved because of his discovery, both through his own efforts and those of his students. Had he lived but two decades longer he would have seen his theory fully explained and accepted, his prophylaxis used throughout the world. He might well have fathered antiseptic surgery himself. As it was, he died in the very dawn of a new age of surgery and midwifery, and other men carried to victory the fight which he began.

—*Slaughter*

An Ideal Surgical Correction of Ectopia Vesica

W. G. SHULTZ, M.D., F.A.C.S., F.I.C.S., D.A.B.

TUCSON, ARIZONA

WHILE I was observing one of America's leading urologists as he performed an operation for the correction of this unfortunate congenital defect, it occurred to me that if some means could be devised by which the pubic bones could be brought into approximation, two of this operation's most formidable drawbacks could be disposed of.

The author presents bilateral osteotomy of the os ilium as a part of the surgical correction of ectopia vesica. He points out that there are two important advantages obtainable thereby: (a) that a urethral sphincter can be constructed from the arms of this muscle without separation of either from its attachment to the pelvic bone, thus preventing damage or destruction of the blood or nerve supply of these muscles, and (b) that it results in close approximation of the pubic bones, which permits closure of the abdomen without "sliding" procedures and hence results in a strong abdominal wall. A case is presented, in which the patient was a girl under the age of 3 years and in which the results were excellent.

The possible means are as follows: 1. A urethral sphincter could be constructed from the two arms of this muscle, without separation of either from its attachment to the pubic bone; this would prevent damage to, or destruction of, the blood or nerve supply of these muscles. This, in my opinion, would be a valuable factor in obtaining a functioning vesical sphincter. 2. Close approximation of the pubic bones would permit ready closure of the abdominal defect and easy approximation of the abdominal recti muscles and fasciae, without sliding procedures. This would result in a strong abdominal wall, which is an important aid to initiating and propelling the urinary stream in the act of voiding.

The patient whose case is here presented was one from the local Crippled Children's Clinic, and Dr. John R. Schwartzmann, an orthopedic surgeon, was giving her orthopedic care. When he learned that I was planning to admit her to the hospital for plastic repair of the exstrophic bladder he asked that I notify him after I had completed my operation and she had recovered sufficiently, as he wished to perform a corrective orthopedic procedure on the bony pelvis.

Further discussion elicited the fact that he planned to do a bilateral osteotomy of the os ilium. When asked if the pubic bones could then be closely approximated, he stated that they could. I then suggested that he perform the osteotomy first and that we collaborate in the balance of the

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Submitted for publication June 2, 1958.

operation. This was agreed upon, and the reports which follow will, I believe, substantiate the soundness of my reasoning.

When I lay claim to original thinking in this case, I must admit to a lack of complete knowledge of all the literature on the subject.

The procedure here presented was thought out, planned, and executed in February and March 1955. I must confess that both Dr. Schwartzmann and I were totally unaware of, and that until over two years later (May 1957) I did not learn of, Dr. F. Trendelenburg's classic contribution to this subject.

Dr. Trendelenburg, as is well known, was Professor of Surgery in the University of Leipzig, Germany. On May 30, 1906, he presented a paper entitled "The Treatment of Ectopia Vesicae" before the American Surgical Association. This paper was printed in the August 1906 issue of the *Annals of Surgery*. It presents such sound original thinking and an approach so closely akin to that used in the case here presented, that my presentation will be greatly enhanced by certain pertinent quotations from it.

"The repair of congenital defects of the urethra and bladder constitutes one of the most difficult and for that reason perhaps one of the most interesting chapters in plastic surgery, and if the outcome be successful it may be regarded with intense satisfaction. During the past fifty years many surgeons have occupied themselves with the solution of this problem, and many have been the attempts to devise a method by the aid of which, even in the severe types of the deformity, a restoration of the normal bladder form and normal bladder function could be secured. Up to the present time, however, this ideal has not been reached.

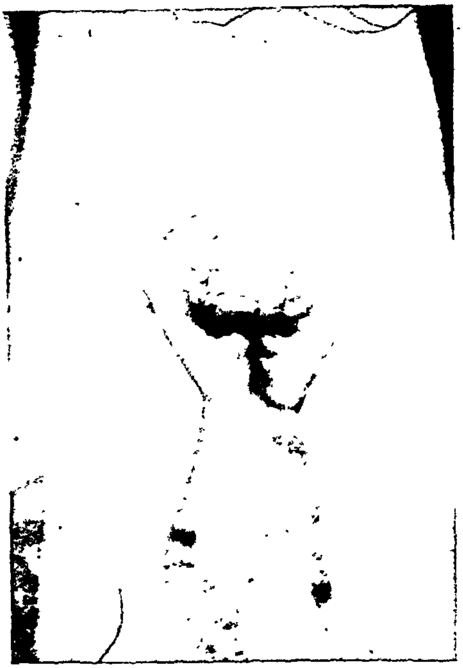

Fig. 1.—Congenital exstrophy of bladder and *prolapse of rectum in D.K., aged 2½ years.*

"For more than twenty years I have endeavored to aid the direct union of the freshened edges in cases of ectopia by producing a separation of the pelvic bones at the sacroiliac synchondrosis in order to provide for a closer approximation of the two halves of the pelvis anteriorly at the symphysis and consequently of the edges of the defect. Only a limited number of surgeons have made use of my method, because the bilateral separation of the os ilei from the sacrum was generally regarded as a very dangerous procedure.

"The reason for the failure may be accounted for by the fact that the two sections of the pelvis which have been separated at the sacroiliac synchondrosis have a tendency to gradually resume their former position, therefore the neck of the bladder and the prostatic portions of the urethra which are closely connected with the pubic bones, are pulled upon to such an extent that the muscular ring can no longer be brought into play.

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*Trendelenburg, F.: The Treatment of Ectopia Vesicae, Ann. Surg. 44, August, 1906.

"I have made several attempts to overcome this difficulty by mobilizing the pubic bones with the help of the chisel or by dissecting widely the attachments of the urethra and the neck of the bladder to the latter. In no instance of complete ectopia have I been favored, however, with a permanent result."

He goes on to mention the case of a little girl with pronounced epispadias for which, in his own words, he "did a bloody separation of the pelvic bones at the sacroiliac synchondroses," which permitted complete approximation of the pubic bones, then performed his plastic reconstruction and followed this by wiring the symphysis with silver wire. He then stated: "The wire suture was the cause of the production of a fistulous tract, but the latter closed when the suture, which had already cut its way through the bone, was extracted."

He stated that in this case the result was perfectly satisfactory, and again I quote him verbatim:

"The question naturally arises, why was not a similar effect obtained in cases of complete vesical ectopia? The explanation may be found in the fact that it is impossible in these cases to bring together the pelvic bones in front and to keep them permanently in position. Wiring of the bones particularly in boys cannot be advantageously employed, because the wire comes in conflict with both the bladder and the penis. In younger children, moreover, the wire is very apt to cut its way through the tissues.

"I am of the opinion that it would be wise to go back to the old idea advanced by Demme and Passavant and to make an attempt to bring about the desired changes in the bony structures of the pelvis by orthopedic measures."

For the sake of the record I am attempting to find out what the idea advanced by Demme and Passavant was, but, up to the time of writing, have been unsuccessful. It may be that these surgeons did osteoto-

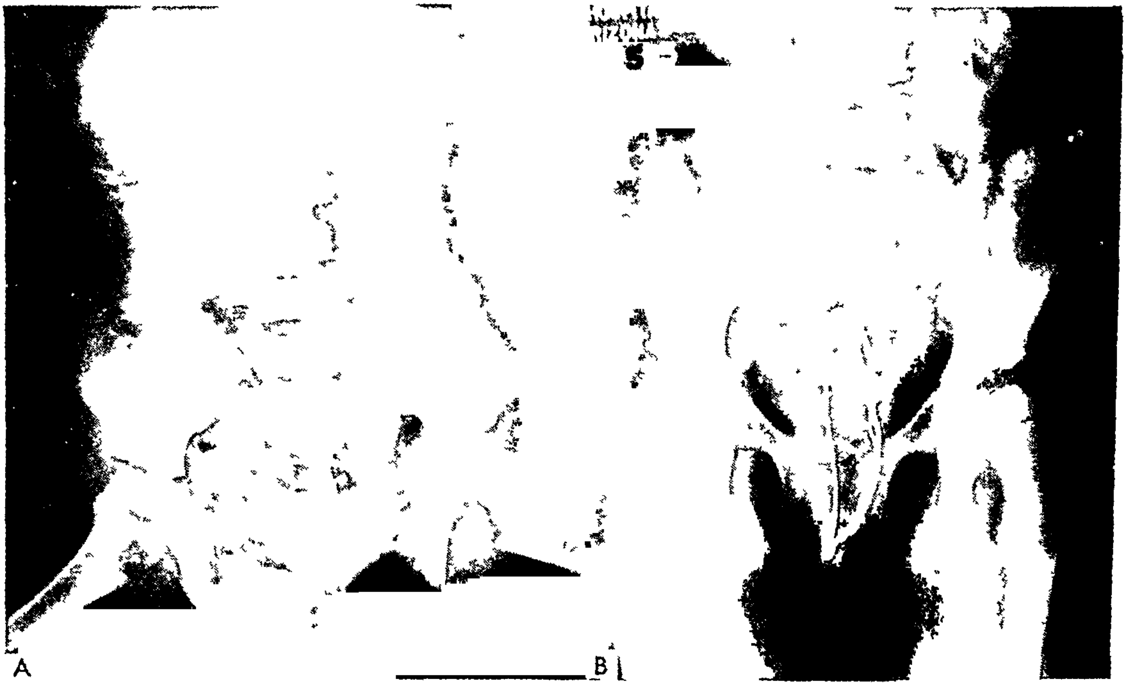

Fig. 2.—Roentgenograms of patient shown in Figure 1 (see text).

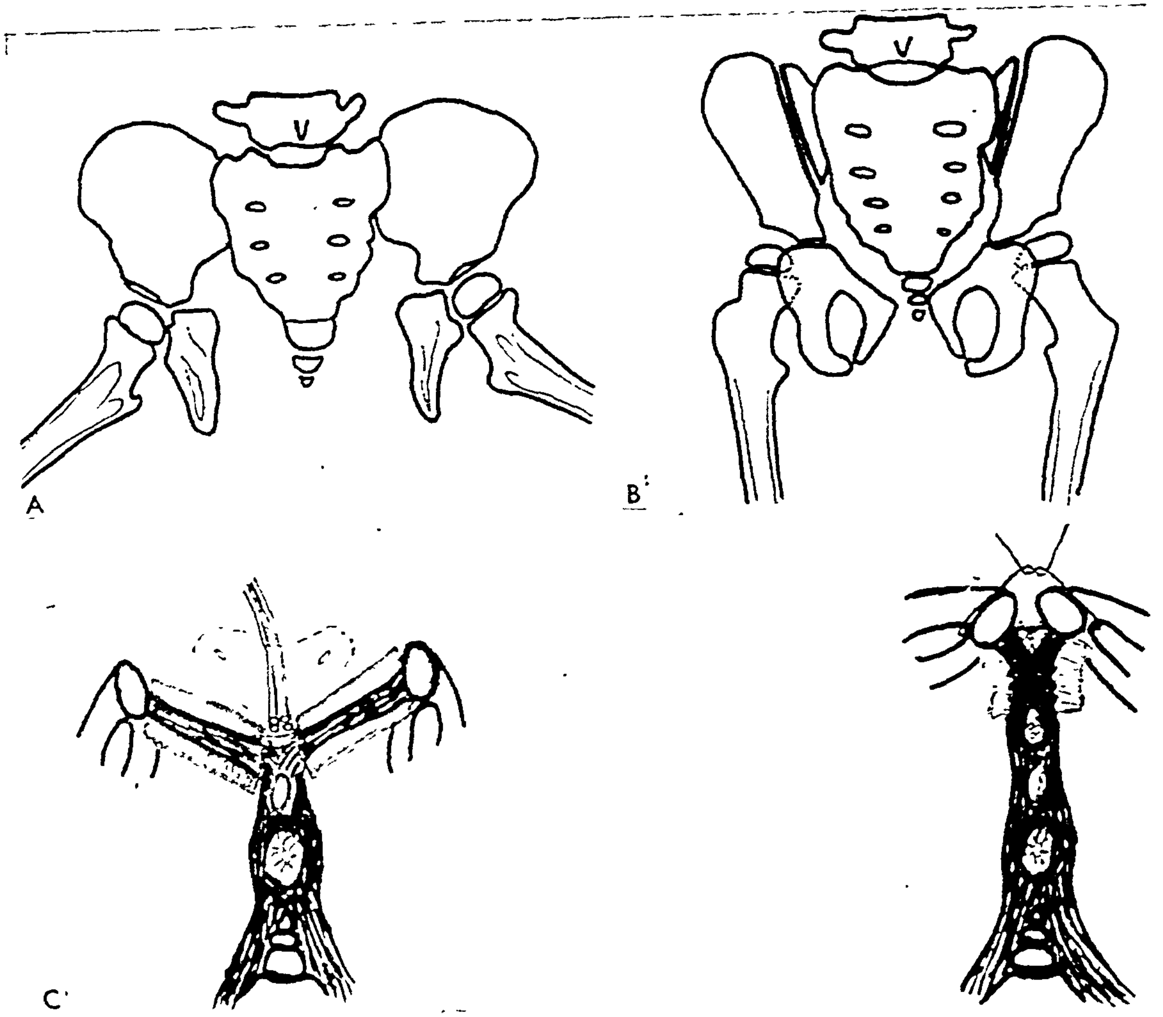

Fig. 3.—*A*, normal positioning of hips. *B*, first steps of author's technic. *C*, suturing technic (see text).

mies of the os ilium. If so, Dr. Schwartzmann and I will have unwittingly resurrected an old idea, but the result must still be considered a most fortunate event in this instance.

I leave it to the orthopedic surgeons to discuss, pro and con, the effect Dr. Trendelenburg's technic of manually producing a separation at the sacroiliac synchondrosis, if it were permanently successful, would have on the stability and weight-bearing ability of the pelvic girdle, which must support the entire upper portion of the human body. It is my personal opinion, however, that any procedure which resulted in producing unstable sacroiliac joints would result in undesirable orthopedic disability.

I recognize the fact that many and various procedures for the attempted correction of the exstrophic bladder are old, going back at least a century. I have no knowledge, however, of any previous attempt to combine them with bilateral osteotomy of the os ilei, and therefore, until this is proved incorrect, I present the operation as a new approach to this problem.

Fig. 4.—Postoperative photograph of child D. K.

The ideal sought after in such cases is to produce a bladder of normal bladder form, return it to the position nature intended it to occupy, so that it possesses or will develop adequate capacity and be able to retain, initiate and forcefully expel the urine, in addition to cutting off the urinary stream completely after total emptying of the bladder, without incontinence or dribbling.

Even though these ideals are not attained in every case, one may attain results greatly preferable to those of ureterosigmoidostomy and other procedures that have been been tried. If one fails these other procedures can still be carried out.

REPORT OF CASE

D. K., aged 2½ years (Fig. 1), was born with exstrophy of the urinary bladder and prolapse of the rectum with incontinence of feces. She was first seen by me on Dec. 6, 1954. Two operations had already been done on the rectum; the first via the abdominal approach, at which time it was reported that a uterus, tubes, ovaries and a vagina were present. An attempt to elevate the rectum was unsuccessful as to incontinence of feces. A second operation, on the rectal sphincter, was done at Children's Hospital and was successful.

The child was admitted to St. Mary's Hospital in February 1955, and on February 18 Dr. John R. Schwartzmann performed the osteotomy.

Operative Report of Dr. Schwartzmann.—"2-18-55. This child has been seen and followed in Crippled Children's Division. She has a complete exstrophy and a congenital anomaly of the pelvis in that the pubic bones and the pelvic arch pass directly anteriorly from the sacroiliac joint and the symphysis lies about 3 inches (7.5 cm.) apart. This results in an external rotation of the hips and the child walks with a waddling gait, grossly unstable on both sides although hips themselves are in joint. Dr. Shultz has worked the child up and plans to repair the bladder, returning it to the abdominal cavity, but has felt that this particular procedure would be facilitated if the pubes could be brought together and a symphysis restored to allow better closure of the abdominal wall over a reconstructed bladder. It was possible passively to compress the pelvis to a degree and it was felt that an osteotomy of the ilium through the greater sciatic notch would be of value in allowing some collapse and reshaping of the pelvic inlet to allow approximating the pubes toward forming a symphysis. Besides this particular restoration it would also allow better positioning of the hips for walking.

"On 2-18-55 (Fig. 2*A*), under general anesthetic, after usual surgical preparations, with the child in the prone position, the posterior ilium was exposed by anatomic dissection through an incision over the posterior iliac crest and the lateral table was exposed subperiosteally. The greater sciatic notch was exposed. With an osteotome the outer table was osteotomized, carrying down to the inner table of the ilium, and this was partially osteotomized. It was possible then to do an osteoclasis and turn the wing and pubes forward towards the midline. This wound was closed in anatomic layers with interrupted deep catgut and black silk to the skin. An identical procedure was carried out on the opposite side (Fig. 2*B*). On completion of the procedure it was possible to bring the pubic bones to within ¾ inch (1.9 cm.) of each other and this resulted in normal positioning of the hips (Fig. 3, A *and B*). An Elastoplast retaining dressing was applied, and the child was immobilized in bed in a pelvic sling. A second stage procedure within two or three weeks can be carried out by Dr. Shultz and following this an attempt will be made to complete restoration of the symphysis pubis and restore a pelvic arch for this child."

Signed: *Dr. J. R. Schwartzmann*

On March 4, I operated on the child. Two incisions were made in the mucosa from the lower end of the trigone almost to the opening of the vagina, one on each side, in such a manner that a ⅛ inch (0.32 cm.) strip of mucosa was left at the base where a urethra was to be constructed (Fig. 3*C*). The mucosa was then incised over each sphincter muscle, and flaps of mucosa were laid back from each muscle so that they were denuded completely. The bladder was then completely freed from the edges of the skin and also separated from the peritoneum to such an extent that it could be held like a cyst and depressed into the pelvic portion of the abdomen quite readily. The edges of the skin were then dissected free from the abdominal muscles, which exposed them for about 1 inch (2.5 cm.) on each side. Four strands of heavy vitallium wire were then laid in the midline over the strip of mucosa that had been left for a urethra. These strands, employed to serve as a urethral splint, were long enough to insure that their upper ends could be left out through the suprapubic opening and their lower ends left out through the urethra, with sufficient length remaining to tie these ends together outside, forming a complete loop (Fig. 2*B*), insuring against any

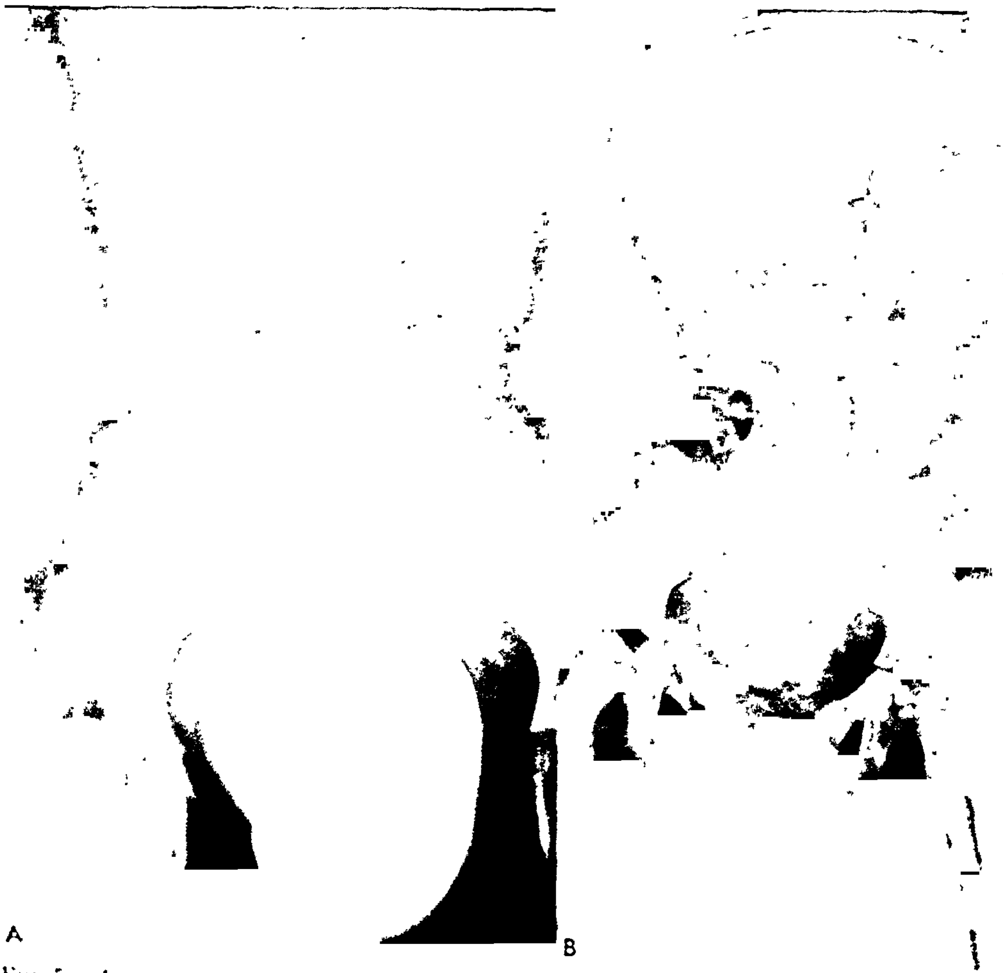

Fig. 5. *A*, roentgenogram showing corrected bladder (see text). *B*, intravenous pyelogram. Conditions normal.

possibility that they might get out of position or be lost. Two triple 000 interrupted chromic catgut sutures were then placed in each arm of the sphincter muscles in such a manner as to approximate them in front of the splint. This represented the start toward construction of a sphincter and a urethra. The edges of the bladder were then brought together above this with interrupted double 00 chromic catgut sutures. A No. 16 Foley catheter was placed in the bladder at the uppermost end, where the splint likewise emerged from the now completely constructed bladder. At this stage Dr. Schwartzmann entered the operation, dissecting out each pubic bone and inserting two double coarse silk sutures around each, pulling them as close together as possible with the tie (Fig. 3*C*). Two more triple 000 chromic catgut sutures were then placed in the sphincter muscles and the mucosal flaps sutured together in front of the sphincter with the same material.

The abdominal muscles and fascia were then sutured together with No. 0 interrupted chromic catgut sutures, and the edges of the skin were closed with continuous interlocked silk sutures.

Progress was quite satisfactory, but after ten days I decided that the vitallium wire I had used as a splint was too heavy and replaced it with 4 strands of coarse silk, which I considered much more comfortable and not nearly so likely to produce cutting or pressure necrosis in the region of the urethra.

The next operative procedure was done four weeks after construction of the bladder, at which time (April 1), I replaced the silk urethral splint with a No. 10 Foley catheter, removed the suprapubic catheter, and removed the granulation tissue around the suprapubic opening, closing it with silk sutures.

The suprapubic wound healed by first intention in spite of the fact that the No. 10 Foley catheter left indwelling through the urethra did not function perfectly. Six weeks after reconstruction of the bladder this catheter was removed. The patient was incontinent for thirty-six hours after its removal but then became continent except when agitated or crying. Within a week she had satisfactory control, with evidence of increasing bladder capacity (Fig. 4).

Three years have now elapsed since the operation. The child has not worn corrective shoes for the past year. She is attending school, with no restrictions placed on her activities at any time. Her teacher has been requested to permit toilet privileges on request, because the urge to void makes the child uncomfortable if it is not heeded with reasonable promptness. The bladder's capacity, however, is now 8 ounces (Fig. 5*A*), with no incontinence, no residuals and no enuresis. Intravenous pyelograms (Fig. 5*B*) are normal. This should, in my opinion, be classified as an ideal result.

COMMENT

I am grateful for the Providence that brought Dr. Schwartzmann and me together in this case and made it possible for us to combine these two procedures with such a complete success.

The rapidly growing bony tissues of the young do not offer much resistance to constantly applied pressure and may readily be molded into their form. Trendelenburg has pointed out that this is well illustrated by the formerly common practice of binding the feet of young Chinese women. It is also well illustrated by the pointed craniums of some uncivilized tribes. Some, therefore, may wish to approach the problem through some type of molding procedure.

What about the application of the technic here recommended when a small bladder is present? It still should be an indispensable aid to constructing a functioning sphincter, and since skin from the penis and scrotum is used to construct a urethra, why not use it here? When osteotomy is done and the pubic bones are brought together there will be more than enough skin to cover the abdominal muscle closure, so why not, in such cases, take enough from that bordering the bladder to construct one of sufficient size? True, the skin will not be contractile and such a bladder may not empty completely, but the true vesical tissue might in time increase in size to a point that would permit removal of the portion constructed of skin.

At what age should this procedure be carried out? In the case here presented it was done when the patient was just under the age of 3 years. The result has been reported. Dr. Schwartzmann has said that in his opinion the patient should approximate this age before osteotomy is done. I concur, since the sphincter muscle is sufficiently developed at that age to permit better identification and therefore to lend itself more readily to the procedure.

These and many other questions, however, I do not pretend to be capable of answering positively. I only hope that this presentation will stimulate sufficient effort to produce the answers and arrive at the ideal results in most such cases.

SUMARIO

Demonstra o uso osteotomia bilateral do osso iliaco como parte da correçao cirurgica da ectopia vesical. Acentua duas vantagens: a-o esfincter uretral pode ser reconstruido com os feixes musclares sem desinseçao ou dano a suplencia nervosa e vascular; b- o resultado na aproximaçao dos ossos pubicos permite o fechamento abdominal sem necessidade de tecnica complementar.

Apresenta um caso de uma menina de 2 anos de idade com resultado excelente.

RIASSUNTO

L'autore descrive l'osteotomia bilaterale dell 'osso iliaco come tempo della cura chirurgica dell'ectopia vescicale. Si ottengono due grandi vantaggi: a) che lo sfintere dell'urethra può essere ricostruito senza staccarlo dalle sue inserzioni sulla pelvi, rispettando cosi tanto le sue connessioni vascolari che quelle nervose; b) che si ottiene unamiglior avvicinamento delle ossa pubiche il che consente una chiusura dell'addome senza dover ricorrere ai metodi di scivolamento e quindi una maggiroe solidita.

Viene presentato il caso di una bambina di meno di due anni di età in cui il risultato fu eccellente.

RESUMEN

El autor propone la osteotomía bilateral del ilion como parte de la corrección de la ectopia vesical. Señala que con esto se obtienen dos ventajas importantes: (a) que esfinter de la urethrapuede ser reconstruído con las ramas de este músculo sin separación de sus inseciones en el hueso pelviano evitándose así el daño a la irrigación o inervación del músculo, y (b) que se obtiene una aproximación de los huesos pubis lo que permite un cierre de la herida abdominal un caso de una niña de menos de dos años en la cual el resultado fue excelente.

ZUSAMMENFASSUNG

Der Verfasser beschreibt die doppelseitige Osteotomie des Darmbeins als Teil der chirurgischen Korrektur der Harnblasenektopie. Er weist darauf hin, dass sich auf diese Weise zwei Vorteile erzielen lassen. Erstens lässt sich aus den Muskelarmen ein Harnröhrensphinkter herstellen, ohne dass die Muskeln von ihrem Ansatz am Beckenknochen getrennt werden; auf diese Weise wird eine Schädigung oder Zerstörung der Blut oder Nervenversorgung dieser Muskeln vermieden. Zweitens wird eine enge Annäherung der Schambeine erzielt, was eine Schliessung der Bauchwand ohne "Gleitverfahren" gestattet und zur Entstehung einer starken Bauchwand führt. Es wird über den Fall eines weniger als zwei Jahre alten Mädchens berichtet, bei dem die Operation zu einem ausgezeichneten Ergebnis führte.

RÉSUMÉ

L'auteur présente une technique d'ostéotomie bilatérale de l'ilion, faisant partie de la correction chirurgicale de l'ectopie vésiculaire. Cette méthode présente les avantages suivants: a) formation d'un sphincter uréthral à partir des branches de ce muscle sans les séparer de leurs attaches pelviennes, évitant ainsi des troubles de la circulation sanguine et veineuse; b) approximation étroite des os pubis qui permet une fermeture abdominale supprimant la technique par coulissage, et procure ainsi une paroi abdominale résistante. L'auteur décrit le cas d'une fillette de moins de 2 ans où les résultats se sont révélés excellents.

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Urethrograms in the Diagnosis and Management of Benign Prostatic Hypertrophy*

DONALD ROLNICK, M.D., ROLAND R. CROSS JR., M.D., AND
FREDERICK A. LLOYD, M.D.

HINES, ILLINOIS

Preoperative and postoperative urethrographic studies were performed on a series of patients who had undergone surgical treatment for benign prostatic hypertrophy. The right oblique urethrogram proved most useful in this series from the diagnostic point of view. When the size of the prostate gland is difficult to evaluate on rectal examination and cystoscopic study, the urethrogram can be of great aid in giving an accurate indication of the size of the gland. The authors point out that it is difficult to correlate the patient's subjective complaints with data obtained by objective methods.

THE use of ureothrograms in the diagnosis of benign prostatic hypertrophy and in the evaluation of the end results of prostatic surgical treatment has been emphasized in the past. Nevertheless, urethrographic study has never been widely used by urologists in their management of prostatism. In this study urethrograms were taken of a series of patients, preoperatively and postoperatively, who were surgically treated for benign prostatic hypertrophy. An attempt was then made to correlate these urethrograms, preoperatively and postoperatively, with certain objective signs and subjective symptoms. The objective criteria were the results of rectal examination, cystoscopic study, tests for residual urine and microscopic examination of the urine. The subjective symptoms were nocturia, urgency, frequency, burning on urination and difficulty in starting and stopping the urinary stream. Preoperative urethrograms were taken of 34 patients. Of this group, 28 underwent transurethral resection of the prostate; on the remaining 6, retropubic prostatectomy was performed. It was possible to follow 24 of these patients for three months, and 17 for six months, after the operation. With every patient the following measures were taken before and after the operation: 1. Anteroposterior and right oblique urethrograms were obtained. 2. Rectal examination, cystoscopic study, tests for residual urine and microscopic examination of the urine were done. 3. All patients were questioned with regard to subjective symptoms referable to the urinary tract.

In some of the patients air was used as a contrast medium. It was observed, however, that air was not of great value except when associated vesical disease was present or there was intravesical protrusion of the prostatic lobes. In addition, the use of air required more roentgen studies, made the procedure more difficult and added to the discomfort of the patient. An ordinary urethrogram appeared to be best suited for this particular study.

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*Awarded Second place, Chicago Urological Society Residents' Prize Essay Contest, December [illegible].

From The Urology Service, Hines Veterans Administration Hospital, Hines.

Submitted for publication June 11, [illegible].

The urethrographic medium was 30 per cent Skiodan in 0.5 per cent methyl cellulose. This medium proved to have excellent radiopacity, was relatively nonirritating to the urethral mucosa, and had a viscosity that made it easy to inject.

The Brodny clamp (Fig. 1*A*) was used to take the urethrograms. In order to obtain the best results with this instrument the plunger should be inserted into the urethral meatus as far as possible, and the prongs should be placed on the corona of the glans penis as tightly as possible.

Fig. 1*B* shows a patient in the right oblique position with the Brodny clamp attached to the penis. The right oblique urethrogram was the best for diagnostic purposes in this study, and all of the following diagrams and urethrograms are in the right oblique position. Fifteen to 20 cc. of the medium was injected for each urethrogram, the film being taken as the last 1 or 2 cc. was injected. Tension was maintained on the penis in order to obliterate the penile folds, and the patient was instructed to breathe normally while the film was taken, so that the external sphincter would appear normal.

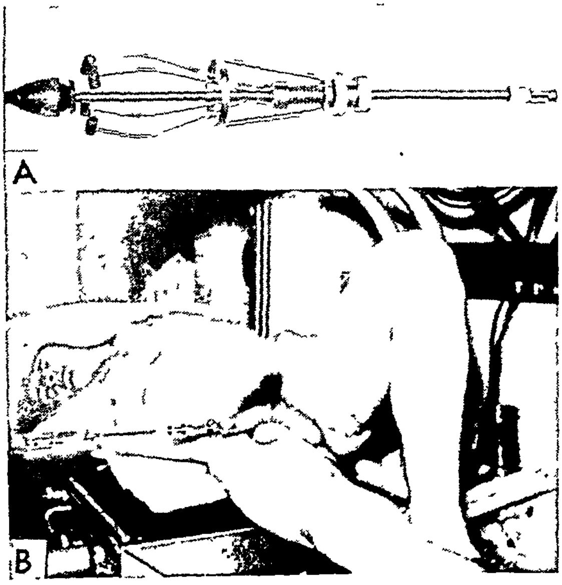

Fig. 1.—*A*, Brodny clamp; *B*, patient in right oblique position with Brodny clamp attached to penis.

Figure 2*A* is a diagram of a normal urethrogram. Only the anatomic features of the posterior portion of the urethra have been emphasized, since in this study we were primarily interested in that area. The verumontanum, represented as a speckled area on the diagram, appears as a filling defect on the actual urethrogram.

A normal urethrogram is shown in Figure 2*B*. The irregularity of the bladder is due to incomplete filling of that organ by the urethrographic medium.

Figure 3*A* is a diagram of benign prostatic hypertrophy. The four cardinal features of this condition as seen on the right oblique urethrogram are shown: (1) anterior-posterior spreading, representing enlargement of the lateral lobes; (2) anterior tilting of the posterior portion of the urethra, representing enlargement of the middle lobe; (3) a defect of the base of the bladder, representing intravesical protrusion of the prostatic lobes, and (4) elongation of the posterior portion of the urethra, which occurs in all cases of prostatic enlargement.

In Figure 3*B* a urethrogram of a patient with benign prostatic hypertrophy shows anterior-posterior spreading, indicating enlargement of the lateral lobes, and anterior tilting of the posterior portion of the urethra, indicating enlargement of the middle lobe. Figure 4*A* is another urethrogram of a patient with benign prostatic hypertrophy showing elongation of the posterior portion of the urethra, a defect at the base of the bladder, representing intravesical protrusion of the prostatic lobes, and anterior-posterior spreading.

Figure 4*B* is a urethrogram of a patient with carcinoma of the prostate.

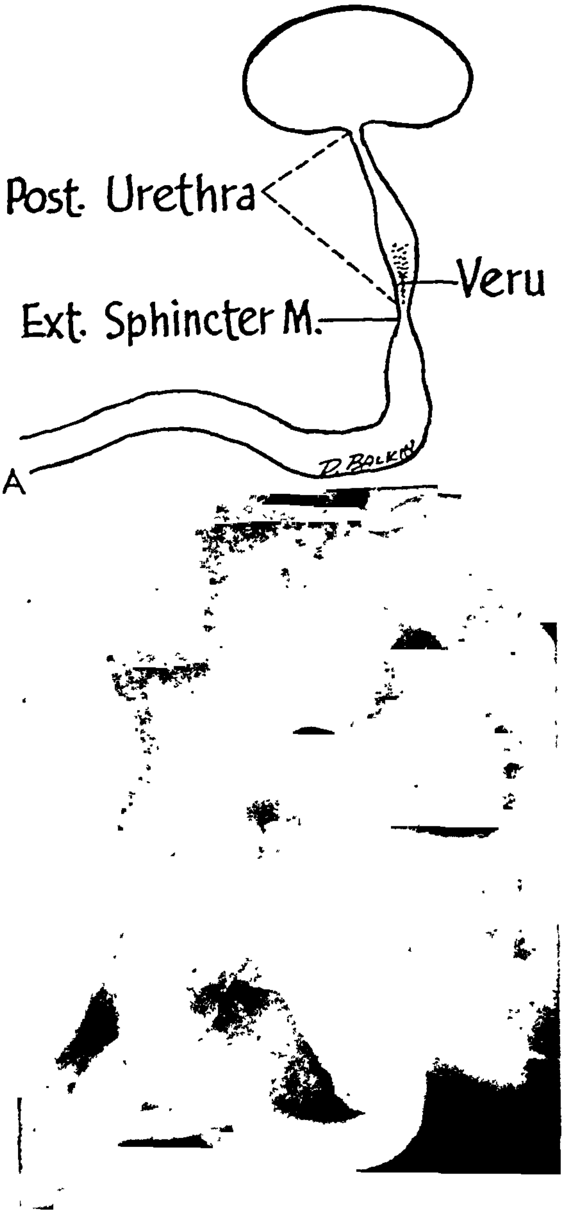

Fig. 2.—*A*, diagram of normal urethrogram. *B*, normal urethrogram.

This patient was not a part of our study, but his urethrogram is interesting because it shows, in addition to carcinoma of the prostate, prostatic enlargement and chronic prostatitis. Carcinoma of the prostate is demonstrated by the straightening, narrowing and irregularity of the posterior portion of the urethra. Prostatic enlargement is shown by elongation of the posterior portion of the urethra, a bladder base defect and some anterior-posterior spreading. The presence of dye in dilated prostatic ducts indicates chronic prostatitis.

The remainder of the urethrograms are preoperative films and films taken six months after the operation.

Figure 4*C* is a preoperative urethrogram of a patient who underwent transurethral resection of the prostate. The size of the prostate was difficult to estimate accurately by rectal and even by cystoscopic examination. As a result, there was some question as to whether an open prostatectomy or a transurethral resection should be performed. The urethrogram demonstrated the prostate to be of the size amenable to transurethral resection, and on the basis of the urethrogram a decision to perform a transurethral resection was made. Six months after the operation

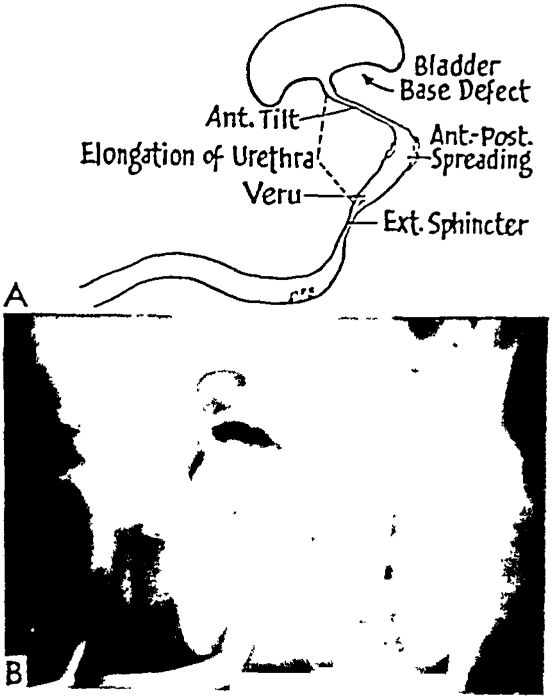

Fig. 3.—*A*, diagram of benign prostatic hypertrophy. *B*, urethrogram of patient with large prostatic hypertrophy (see text).

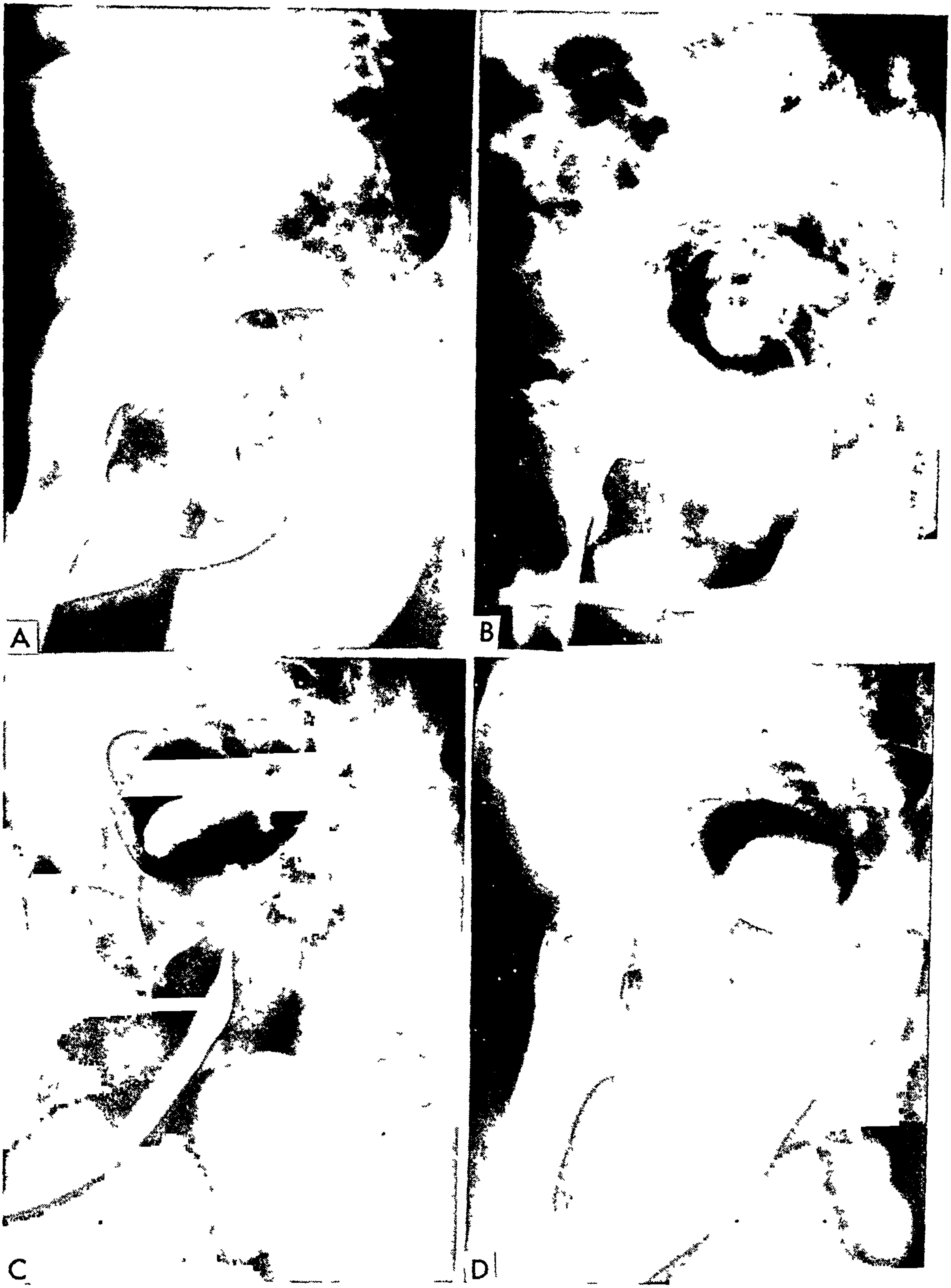

Fig. 4.—*A*, another urethrogram showing benign prostatic hypertrophy (see text). *B*, urethrogram of patient with prostatic carcinoma. *C*, preoperative urethrogram of patient who underwent transurethral prostatic resection. *D*, postoperative urethrogram of patient in *C*.

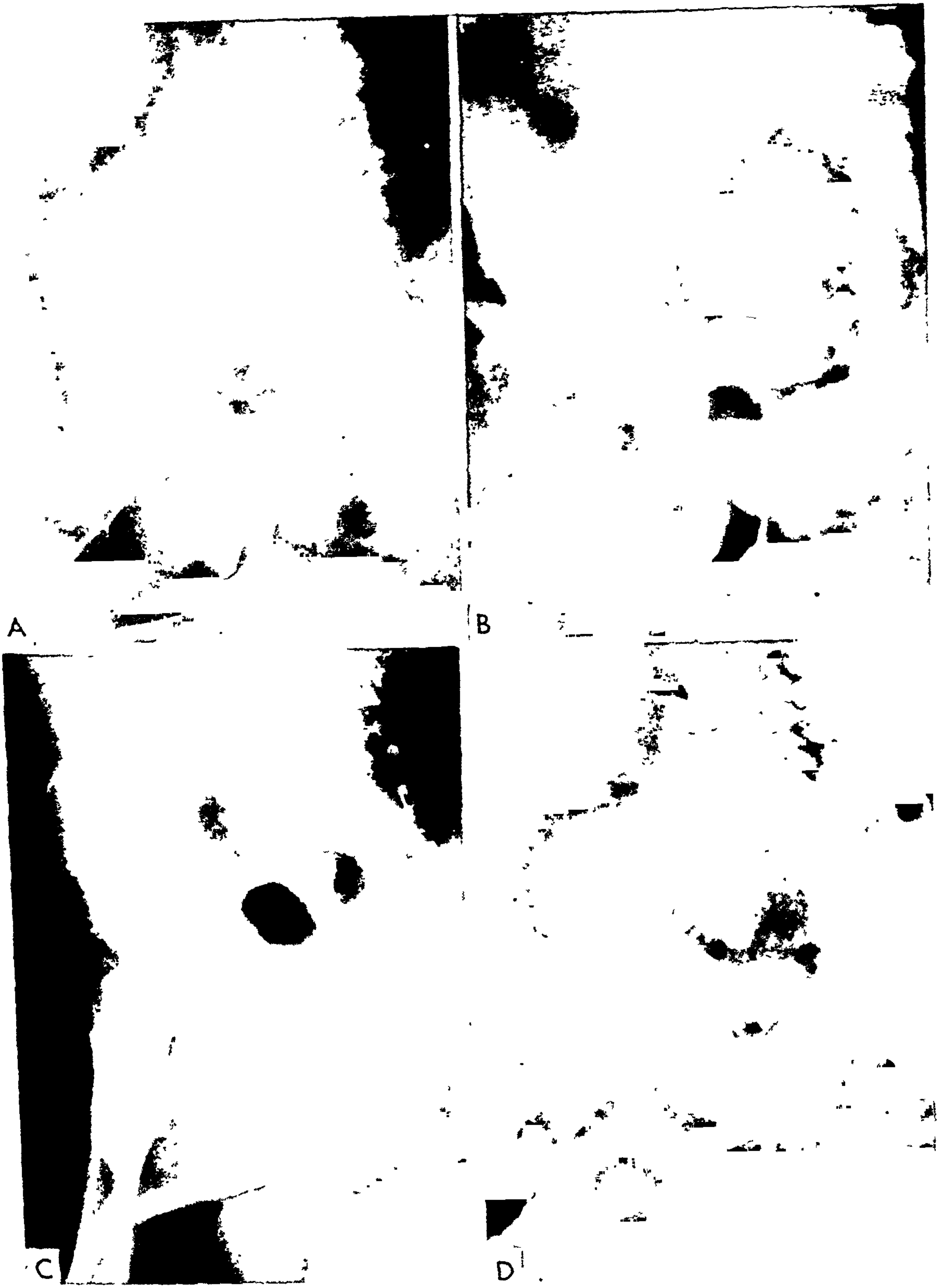

Fig. 5 — A, urethrogram of patient with pronounced benign prostatic hypertrophy. B, urethrogram taken six months after operation, showing complete removal of prostate. C, preoperative urethrogram of patient on whom transurethral resection was performed for benign prostatic hypertrophy. D, postoperative urethrogram of patient in C, showing residual prostatic tissue.

the urethrogram (Fig. 4*B*) showed a large, smooth cavity in the posterior portion of the urethra, indicating the prostate had been well resected. Preoperatively this patient's prostate was enlarged (2 plus) on rectal examination; residual urine (5 ounces) was present, and microscopic study of the urine revealed 5 to 10 leukocytes per high power field. Cystoscopic study revealed moderate trilobar hypertrophy of the prostate. The patient had nocturia, rising three or four times nightly; urgency, frequency, burning on urination, and difficulty in starting and stopping the urinary stream. Six months after the operation there was 10 cc. of residual urine. The prostate was not enlarged on rectal examination, and the urine was microscopically clear. Cystoscopic study revealed a good prostatic resection, with no residual prostatic tissue. The patient, however, still had nocturia (two or three times nightly), as well as frequency and occasional urgency of urination. In this case we were able to correlate the urethrogram with the objective signs but not with the subjective symptoms.

A urethrogram of a patient with pronounced benign prostatic hypertrophy is shown in Figure 5*A*. This patient underwent retropubic prostatectomy. Figure 5*B* is a urethrogram taken six months after the operation, demonstrating complete removal of the prostate gland. Preoperative cystoscopic study revealed large trilobar hypertrophy of the prostate. On rectal examination the prostate was enlarged (4 plus); there was residual urine (7 ounces) and on microscopic examination the urine showed 10 to 20 leukocytes and 5 to 10 erythrocytes per high power field. The patient had nocturia five or six times nightly; urgency, frequency, burning on urination, and difficulty in starting and stopping the urinary stream. Six months after the operation cystoscopic examination revealed complete removal of the prostate, with no residual tissue present. The prostate was not enlarged on rectal examination, there was no residual urine, and microscopically the urine was clear. Aside from nocturia (once nightly) the patient had no urinary complaints. In this case we were able to correlate the urethrogram with both the objective signs and the subjective symptoms.

Figure 5*C* is a preoperative urethrogram of a patient who was subjected to transurethral resection for benign prostatic hypertrophy. Preoperatively the prostate was enlarged (1 plus-2 plus) on rectal examination, there was residual urine (3 ounces), and microscopically the urine showed 3 to 5 leukocytes per high power field. Cystoscopically there was a small trilobar hypertrophy of the prostate. The patient had nocturia two to three times nightly, occasional urgency, some frequency of urination and some difficulty in starting and stopping the urinary stream. Six months after the operation the prostate was enlarged (0.5 plus-1 plus) on rectal examination, residual urine amounted to 2½ ounces, and microscopically the urine showed 35 to 40 leukocytes per high power field. The patient had nocturia three or four times nightly, with urgency, frequency and burning on urination. Figure 5*D* is a urethrogram taken six months after the operation, demonstrating the presence of residual prostatic tissue by the bladder base defect. On the basis of this urethrogram a decision was made to perform a repeat transurethral resection. The presence of residual prostatic tissue was confirmed cystoscopically, and a repeat transurethral resection was performed. In this case we were able to correlate the urethrogram with both the objective signs and the subjective symptoms.

The accompanying table shows the correlations between the urethrogram, the objective signs and the subjective symptoms six months after the operation.

Correlations With Urethrograms Six Months After Operation

Objective signs	88.2%
Subjective symptoms	35.3%
Objective signs and subjective symptoms	23.5%

CONCLUSIONS

Urethrograms were taken, preoperatively and postoperatively, of a series of patients who had undergone operations for benign prostatic hypertrophy. An attempt was then made to correlate these urethrograms, preoperatively and postoperatively, with certain objective data and subjective symptoms of these patients.

Air as a contrast medium had little value in this particular study. Thirty per cent skiodan in 0.5 per cent methyl cellulose was an excellent urethrographic medium.

Urethrograms are presented. The right oblique urethrogram was found to be most diagnostic.

When estimation of the size of the prostate gland is confusing on rectal and cystoscopic examination the urethrogram can be of great value in giving an accurate indication of the size of the gland.

In this study there was a high correlation between the urethrogram and the objective observations (88.2 per cent). Correlation between the urethrogram and the subjective symptoms was poor (35.3 per cent). Correlation of the urethrogram with both the objective findings and subjective symptoms was even poorer (23.5 per cent).

These figures demonstrate what is frequently observed by urologists after any type of prostatic surgical procedure: namely, the fact that the patient's complaints are often difficult to correlate with the objective means of evaluating the end results of prostatic surgical treatment.

Although urethrographic study does not appear suitable for routine use in the diagnosis and management of benign prostatic hypertrophy, it is, in selected cases, a valuable addition to the armamentarium of the urologist in the management of prostatism.

CONCLUSIONS

Des uréthrogrammes pré- et post-opératoires ont été pratiqués dans une série de cas d'affections bénignes de la prostate, et on fait l'objet d'une étude comparative avec les symptômes objectifs et subjectifs.

L'air, en tant que moyen de contraste, a peu de valeur dans ces cas. Par contre une solution de 30% de "skiodan" dans 0.5% de méthyl-cellulose a donné d'excellents résultats.

Des uréthrogrammes caractéristiques sont présentés, le meilleur en vue du diagnostic étant l'uréthrogramme droit.

Cet examen peut être précieux lorsqu'il s'agit de préciser la dimension de la prostate après un examen rectal et cystoscopique non décisif.

L'auteur a constaté une corrélation étroite entre l'uréthrogramme et les données objectives (88.2%) ; cette corrélation a été beaucoup plus faible (35.3%) pour les symptômes subjectifs, et plus faible encore (23.5%) pour l'ensemble des symptômes objectifs et subjectifs.

Les chiffres indiqués confirment l'observation fréquente des urologues après n'importe quel type d'opération prostatique, à savoir que les plaintes du malade sont souvent difficiles à mettre en corrélation avec les moyens objectifs d'évaluation des résultats définitifs de la chirurgie prostatique.

Les examens uréthrographiques ne paraissent pas appropriés en tant qu'examens de routine pour le diagnostic et le traitement de l'hypertrophie prostatique bénigne, mais leur utilité est incontestable dans des cas sélectionnés.

CONCLUSIONES

Se ha hecho una serie de uretrografías en sujetos operados de tumores benignos de próstata antes y después de la operación; con ello se trata de relacionar los datos objetivos de las uretrografías con los síntomas pre postoperatorios de los enfermos.

El aire tiene poco valor como contraste; en cambio es excelente la solución al 30% de "skiodan" en un 0,5% de metil celulosa.

Se presentan algunas uretrografías como ejemplo; la proyección oblicua derecha es la de mayor valor diagnóstico.

Cuando el tacto rectal o el exámen cistocópico no son suficientes para valorar el tamaño de la próstata la uretrogragía es de gran valor.

En el 88% de los casos, los datos de la uretrografía han coincidido con los datos objectivos. En cambio sólo en el 30% coincidían con los síntomas subjetivos, y tan solo en el 23% de los casos con ambas cosas.

Estos números demuestran lo que los urólogos observan con frecuencia después de las operaciones de próstata% que las quejas del enfermo no coinciden con los resultados objetivos obtenidos después del tratamiento.

Aunque la uretrografía no parece ser necesaria para el estudio y diagnóstico ordinario de la hipertrofia benigna de próstata, sin embargo es muy útil como un elemento más en manos del urólogo cuando se enfrenta con casos difíciles.

SCHLUSSFOLGERUNGEN

Es wurden an einer Reihe von Kranken, die wegen gutartiger Prostataerkrankungen operiert wurden, vor und nach dem chirurgischen Eingriff urethrographische Untersuchungen ausgeführt. Danach wurde versucht, die prä-und postoperativen Urethrogramme mit gewissen objektiven Befunden und mit den subjektiven Erscheinungen der Kranken in Beziehung zu bringen.

In der vorliegenden Untersuchung hat sich Luft als Kontrastmittel von geringem Wert erwiesen. Dreissigprozentiges Skiodan in 0.5 prozentiger Methylzellulose war ein ausgezeichnetes urethrographisches Kontrastmittel.

Erläuternde Beispiele von Urethrogrammen werden gezeigt. Das Urethrogramm im rechten schrägen Durchmesser erwies sich als von grösstem diagnostischen Wert.

Wenn man in der Abschätzung der Grösse der Prostata durch rektale und zystoskopische Untersuchungen im Unklaren ist, kann das Urethrogramm sehr hilfreich sein und eine genaue Angabe der Grösse der Drüse hervorbringen.

Die vorliegende Untersuchung ergab eine hohe Übereinstimmung zwischen dem Urethrogramm und den objektiven Bemungen zwischen Urethrogramm und subobachtungen (88,2 Prozent). Übereinstimjektiven Erscheinungen waren schlecht (35,3 Prozent) und die zwischen Urethrogramm und der Kombination von objektiven Befunden und subjektiven Erscheinungen noch schlechter (23,5 Prozent).

Diese Zahlen zeigen, was der Urologe häufig nach allen Arten der Prostatachirurgie beobachtet, nämlich dass sich die Beschwerden des Kranken häufig schwer mit den objektiven Mitteln der Auswertung der Endergebnisse des chirurgischen Eingriffs an der Prostata in Einklang bringen lassen.

Wenn sich auch die urethrographische Untersuchung nicht als ein geeignetes routinemässiges Verfahren in der Diagnostik und Behandlung der gutartigen Prostatahypertrophie zu erweisen scheint, so stellt es doch in ausgewählten Fällen ein wertvolles Hilfsmittel im Rüstzeug des Urologen bei der Behandlung chronischer Prostataleiden dar.

CONCLUSOES

Foram feitos uretrografias de pacientes no pre e pós operatorio de afecções prostáticas benignas. Foi feita tentativa de comparação entre esses filmes e os achados objetivos e os sintomas apresentados pelos pacientes.

O ar como contraste se mostrou de pouco valor neste estudo. Foi excelente a solução a 30% de skiodoan em 5% de metilcelulose.

O uretrograma direito foi considerado de melhor esclarecimento diagnostico. Quando a estimativa do tamanho da prostata não é precisa durante o exame retal ou a cistoscopia o uretrograma dá uma indicação acurada do volume glandular. Neste estudo houve grande correlação entre os dados objetivos e os uretrogramas (88.2%); correspondencia precaria entre a uretrografia e os sintomas (35.3%), e mais precarias ainda as comparações entre os dados do exame e os sintomas (23.5%).

Estas cifras demonstram o que tem observados os urologistas neste tipo de cirurgia da prostata; que isto ocorre principalmente na interpretação dos sintomas dos pacientes que são dificilmente relacionados com os achados clinicos e os meios de avaliar os resultados finais do tratamento cirurgico. Embora essas uretrografias não possam constituir um método de rotina se mostram altamente eluvidativas, nos casos selecionados, para orientação nos casos de prostatites.

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The art of the practice of medicine is to be learned only by experience: 'tis not an inheritance: it cannot be revealed. Learn to see, learn to hear, learn to feel, learn to smell, and know that by practice alone can you become expert.

—*Osler*

Complete Replacement of the Urinary Bladder With Ileum Anastomosed to the Urethra

Experiments on Dogs

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THIS work is based purely on an experimental study of the subject. The study has been going on for approximately three years and is the outcome of some of our other work on substitute bladders in dogs. We have attempted various types of substitute bladder operations, but this article will be confined to the construction of a complete urinary bladder, after total cystectomy, from a segment of ileum anastomosed to the urethra, so that urine may pass through the urethra and maintain a normal intestinal passage.

The study has been made because of our unsatisfactory results with the conventional ureterosigmoid anastomoses both in dogs and in man. Reports from other clinics are similar. Here and there we, as well as others, have obtained good results even over a period of time, but ultimately some type of morbidity, such as ascending renal infection, with renal damage that progresses in many cases to uremia, results in death (Lapides, 1951; Jacobs and Stirling, 1952).

Both the large and the small intestine have been used for bladder reservoirs by attaching a loop of either to the bladder to increase the capacity (small intestine, von Mikulicz, 1899; large intestine, Birnbaum, 1920).

We were attempting to simulate human conditions in which total cystectomy was necessary and then to substitute a reservoir for the urine to be passed through its normal urethral channel.

Bisgard (1943), Rubin (1946) and Goldstein, Sachs and Rubin (1950) produced, both experimentally and clinically, a urinary reservoir with a segment of sigmoid anastomosed to the urethra. We performed 11 operations on dogs, using the sigmoid, with perfect urinary continence in 7 that survived for more than five years. That which may occur in an animal may not always occur in a human being, and vice versa. In 2 clinical cases there was partial failure. Our failures may have been due to our poor selection of 2 patients with general carcinomatosis, primarily in the urinary bladder. Total cystectomy was performed and a sigmoid urinary bladder anastomosed to the urethra. The urine passed through the urethra, but both patients died of general carcinomatosis.

Various other procedures have been performed in the past few years, accomplishing the construction of a conduit (Bricker, 1952; Gilchrist, 1950) or a urinary reser-

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voir (Wells, Pyrah, 1956) with a colostomy.

Mechanically these perform fairly well, but dissatisfaction arises from inability to care for the urine or the fecal contents satisfactorily, producing a mental hazard to the patient.

More recently, in 1957, Giertz and Franksson used the same procedure with sigmoid in 4 human patients, 2 of whom died.

Tasker in 1953 developed a technic in which an isolated loop of small bowel is cut open and sutured to the bladder. Giertz and Franksson, in 1957, developed a similar technic and attached a loop of ileum to the bladder but used it as a urinary reservoir anastomosed to the urethra. They employed this in man. In their 13 cases the loop, either open or closed, was anastomosed to the bladder. Twenty-three patients were subjected to total cystectomy and the anastomosis of the open loop was made to the urethra. In 20 of these the ileum, and in 3 the sigmoid, was employed.

Pyrah, in 1956, used a similar technic in anastomosing a loop of small intestine to the prostatic portion of the urethra.

Independently, we began using an isolated loop of small intestine anastomosed to the urethra in 1954.

Material.—We used 10 dogs of varying size and weight. It was purely an animal experimental procedure to determine the value of a segment of ileum as a complete bladder substitute and the feasibility of its use in man when total cystectomy is necessary, particularly in cases of carcinoma of the bladder.

Our experience has been different from that reported by Giertz and Franksson, who applied the procedure in man.

In our 10 cases, 8 dogs died and 2 are living, which gives us a mortality rate of 80 per cent against Giertz and Franksson's report of 27.7 per cent.

An experimental procedure is described, in which a substitute bladder was constructed in the dog by means of a blind loop of ileum anastomosed to the urethra. Although the results demonstrated perfect continuity of the intestinal passage and also of the ileourethral anastomosis, which permitted urine to pass through the normal urethra, serious postoperative complications arose in most of the dogs. In the authors' opinion this procedure, which if perfected would have great value when total resection of the bladder is necessary because of carcinoma, is probably much more feasible in man than in the experimental animal, since any complications that arise can be better dealt with in clinical than in experimental surgery.

In the 18 cases they reported an open loop ileourethroplasty and total cystectomy were performed, while we used the blind loop for ileourethroplasty.

Method of Procedure.—The dog was prepared as for any other intestinal operative procedure. The bowel was thoroughly cleansed for two days before the operation, and at the same time antibiotics were administered.

Preoperative intravenous pyelograms were taken, and chemical studies of the blood were made. An incision was made in the midline for about 12 cm. upward from the symphysis pubis (Fig. 1*A*). After the peritoneum was opened, the omentum was elevated upward for inspection of the bowel (Fig. 1*B*).

The bowel was carefully elevated to reach the cecum. The ileum was then traced for about 12 cm. from the cecum, and an area of ileum was selected in which

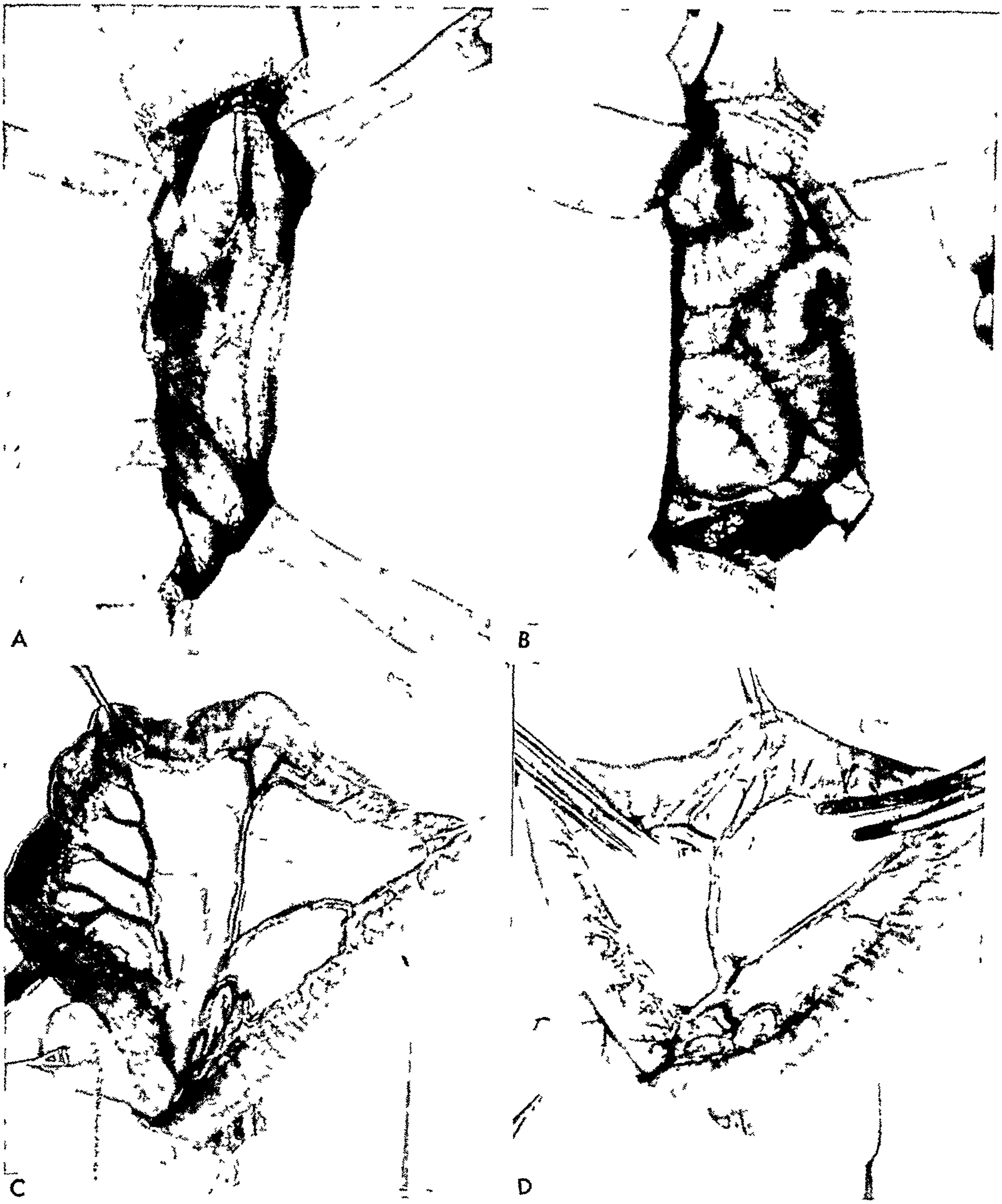

Fig 1.—*A*, incision to peritoneum. *B*, exposure of bowel *C*, exposure of ileum. *D*, segment of ileum to be resected.

the blood supply appeared to be adequate (Fig. 1*C*).

About 12 to 15 cm. of ileum was selected for the ileal bladder. This area was resected between rubber-shod clamps and the loop brought down toward the bladder region (Fig. 1*D*). End-to-end anastomosis of the ileum was accomplished by using

No. 000 chromic catgut through and through continuous sutures and No. 0000 interrupted silk seroserosal sutures (Fig. 2*A*). The gap in the mesentery was closed with a No. 000 continuous catgut suture. Care was taken not to close the gap too tightly, so that it would not obstruct the vascular pedicle.

Both ureters were then identified, and total cystectomy was performed at the urethrovesical anastomosis (Fig. 2*B*).

The free ileal segment was irrigated with warm saline solution.

The proximal end of the ileal loop was now closed with three rows of sutures, first an interrupted Connell catgut through-and-through stitch, then a second row of No. 000 chromic catgut and finally a third row of No. 0000 interrupted silk stitches.

Next, the anastomosis between the ileal segment and the proximal part of the urethra was made. For this we used a No. 000 chromic catgut through-and-through suture and a second row of No. 0000 silk interrupted sutures in the seromuscular area. This made a tight ileourethral anastomosis (Fig. 3, *A*, *B* and *C*).

Both ureters were "fishmouthed" and placed in the ileal loop, posteriorly in 5 cases and anteriorly in 5.

The openings for the ureters in the ileal bladder were closed with one or two interrupted catgut sutures, with avoidance of too tight or too loose a closure. The omentum was brought down over the ileal bladder, which was left free in 5 cases; in the other 5, a suture was taken through the serosa of the ileal bladder and attached to the omentum to prevent too much movement of the new bladder. The abdomen was closed with two rows of No. 0 chromic catgut and the skin with No. 000 subcutaneous catgut.

Intravenous dextrose was given postoperatively for about twenty-four hours.

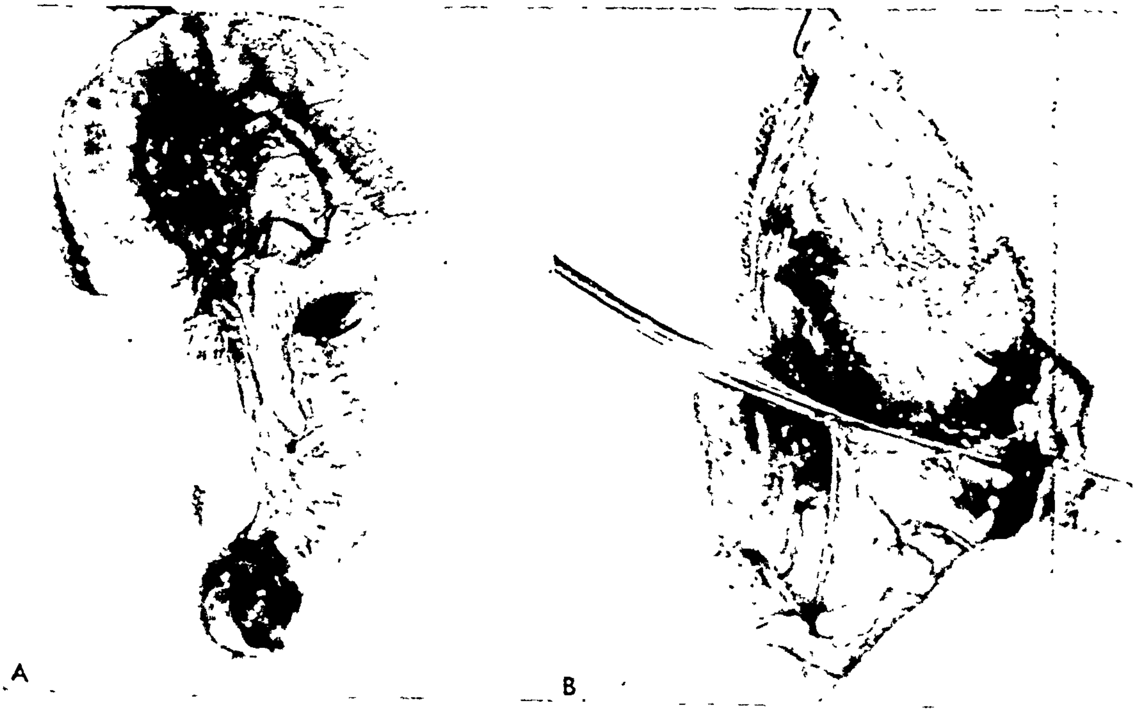

Fig. 2.—*A*, resected ileum and end-to-end anastomosis. *B*, total cystectomy.

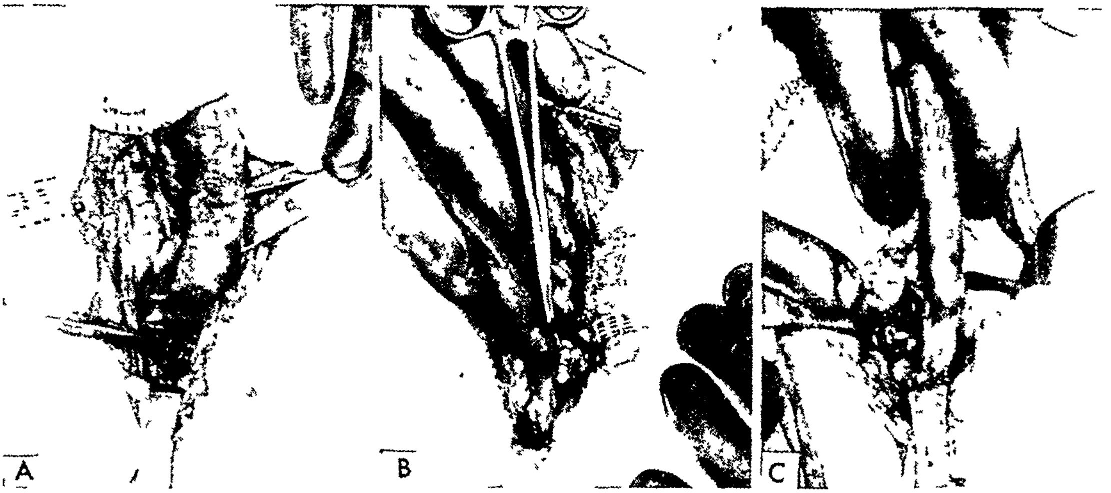

Fig. 3.—*A* and *B*, ileourethral anastomoses. *C*, completed ileourethral anastomosis.

No food was given for three days.

Studies of the blood were made either forty-eight or seventy-two hours, and intravenous pyelograms were performed seven to ten days, after the operation.

In 1 case ureteral catheters were passed up the ureters to the renal pelves through the urethra and the ileal bladder. The ends were cut close to the meatus, so that they could not be pulled out. In this 1 case, urination functioned for twenty-four hours and then the catheters fell out.

Results.—On the whole, our results were not good. It may have been our faulty technic, the condition of the dogs or our inexperience, but more probably it was inability to handle complications in a dog. It is quite possible that our use of the blind loop was not as good as the procedure in which an open loop of ileum is employed. In our experimental work where we used the blind loop of ileum in 10 operations, only 2 dogs lived and 8 died, a mortality of 80 per cent. In the results obtained by Giertz and Franksson in the 18 clinical cases in which they employed the open loop of ileum for a bladder anastomosed to the urethra, there was a mortality rate of only 27.7 per cent. To summarize our results of experimental ileourethroplasty in dogs, the facts are as follows:

Eight dogs died; and 2 are living at the time of writing.

The eight dogs died eleven, twenty-two, seven, nine, two, twelve, and seven days, respectively, after the operation. There was 1 anesthetic death.

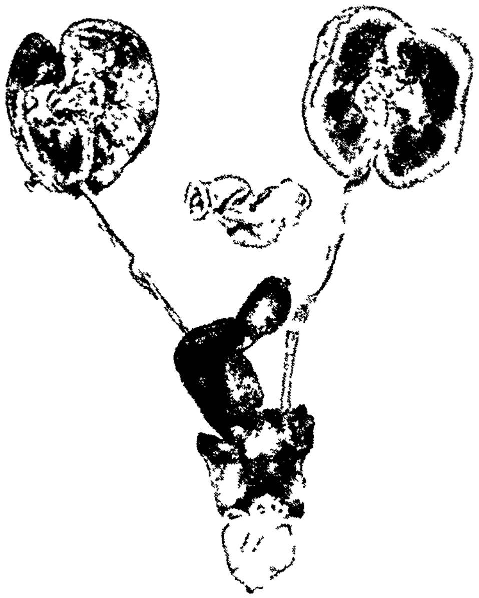

Fig. 4.—Autopsy specimen of ileourethral anastomosis.

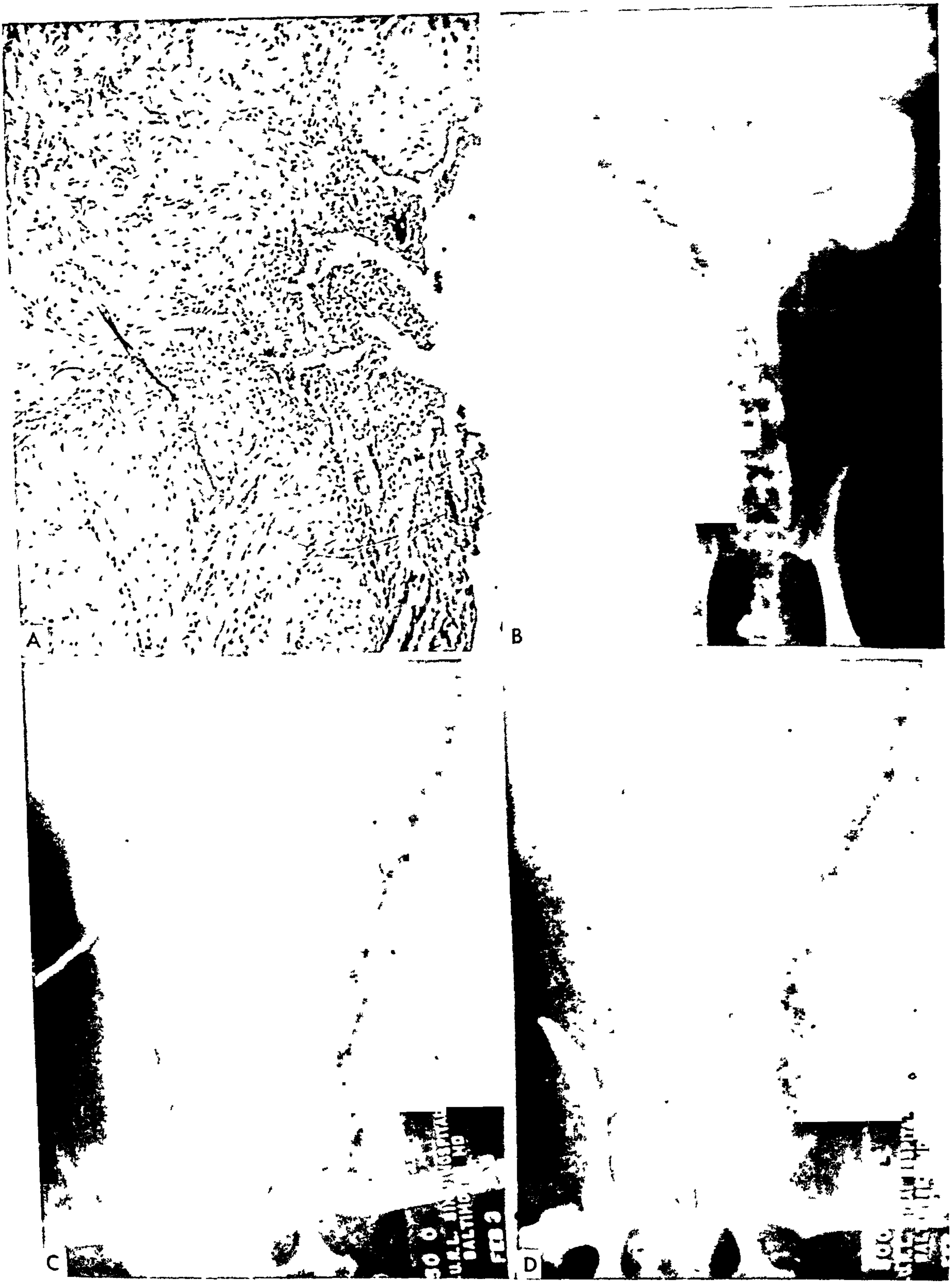

Fig. 5.—*A*, photomicrograph of ileourethral anastomosis. *B*, preoperative intravenous pyelogram. *C*, postoperative cystogram of ileourethral anastomosis. *D*, postoperative urethrocystogram.

esempio in relazione al drenaggio postoperatorio dell'urina, onde evitare idronefrosi e uremia. Vi sono gravi complicazioni ed è necessario mettere a punto una tecnica per controllarle. I risultati, nell'uomo, dipenderanno dall'abilità del chirurgo nel prevenire le complicanze o nel combatterle.

I risultati immediati, ottenuti nel cane sostituendo la vescica con un'ansa sigmoide anastomizzata all'uretra, sono stati migliori e si sono avute complicazioni in minor numero che non con le anse ileali.

RESUMEN

El autor da cuenta de un trabajo experimental en el que sustituye la vejiga de un perro por un asa intestinal anastomosada a la uretra. Los resultados demuestran una perfecta continuidad del paso intestinal así como de la anastomosis ileouretral que permite el paso normal de la orina con una perfecta continencia en la mayor parte de los casos.

La operación parece pues factible pero es preciso mejorarla especialmente en relación con la evacuación urinaria postoperatoria que puede ser causa de hidronefrosis y de uremia. Las complicaciones son grandes y debe mejorarse la técnica para evitarlas.

Los resultados en el hombre dependerán de la habilidad del cirujano tanto para evitar las complicaciones como para resolver los que se presenten.

Se consigue una vejiga funcionalmente buena sin problemas de absorción.

Parece ser que para los autores, los resultados en el perro han sido mejores con el sigma, como sustituto de la vejiga que con un asa intestinal ciega anastomosada a la uretra.

SUMARIO

Apresenta uma comunicação sobre a experiencia do uso de um substituto de bexiga construido n'um cachorro usando alça ileal anastomosada á uretra.

Observou perfeita continuidade intestinal e ileo-uretral e em muitos casos com perfeita continencia da urina.

A operação é factivel mas necessita de melhoramentos, isto e, com respeito a drena gem posoperatoria que pode ser causa de hidronefrose e mesmo uremia. Uma tecnica precisa ser empregada para combater as serias complicações no cão. Os resultados no homem dependem da habilidade cirurgica para prevenir e combater complicações. Pode-se obter uma bexiga funcionalmente boa sem problemas de absorção. O uso de sigmoide no cachorro mostrou melhores resultados com menor numero de complicações.

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Large Ureteral Calculi in a Completely Duplicated Ureter

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An unusual case is reported, in which large multiple calculi occurred in a completely duplicated ureter, the patient being a man aged 62. Both diagnosis and surgical treatment are discussed. Complete nephrectomy was performed, heminephrectomy with ureterectomy having been discarded because of the patient's advanced age and the risk of future atrophy and renal infection.

THE unusual occurrence of large ureteral calculi in a case of bilateral complete duplication of pelves and ureters is presented. The unusual feature involved the presence of six marble-sized stone shadows in the bony pelvis. This presented a diagnostic problem first and a therapeutic problem later.

REPORT OF CASES

C. S., a 62-year-old white man, was admitted to the hospital on May 19, 1957, for gross painless hematuria. Hematuria had occurred intermittently for two weeks. There were no symptoms of prostatism and no associated symptoms referable to the urinary tract. The past history revealed that the patient had passed many small calculi in the past twenty-five years. He estimated that he had passed ten or fifteen calculi without pain. One calculus became impacted at the tip of the penis, and the patient finally milked it through.

He had never sought medical advice concerning these calculi. No other medical or surgical history was obtainable.

Physical examination revealed the patient to be tall, muscular, well developed and in excellent health. He was in no acute distress. In general, no abnormal signs were discovered. The abdomen was normal to palpation. Rectal examination showed a Grade II soft enlargement of the prostate.

A flat roentgenogram of the abdomen showed the aforementioned chain of stone shadows (Fig. 1) in the bony pelvis. There were six of these, varying in size from 1.5 to 2 cm. in diameter. They appeared rounded and in chain formation on the right side of the pelvis, extending from the tip of the coccyx to the right sacroiliac synchondrosis. The radiologist reported them as "in the bowel."

Intravenous pyelographic study (Fig. 2, *left*) revealed excellent function and good delineation of both kidneys. Complete duplication of the ureter was noted on the left side, down to the bladder. On the right side the pyelogram was normal (Fig. 2, *right*), and only one ureter was visualized. The low position noted in the pyelogram, however, gave the impression of a possible bifid pelvis on the right side also. There was no evidence that the calculi were in the genitourinary tract. Again the radiologist reported a normal genitourinary system except for the complete duplication on the left.

An air contrast delineation of the bowel (Fig. 3) was recommended. This, when done, showed the stone shadows to be on the outside of the large bowel. At this point the impression was that the calculi, although unusually large and numerous, might be in a nonfunctioning and nonvisualized half of a duplicated right ureter.

To confirm the latter opinion, cystoscopic and retrograde pyelographic studies were attempted on two occasions. Both attempts were

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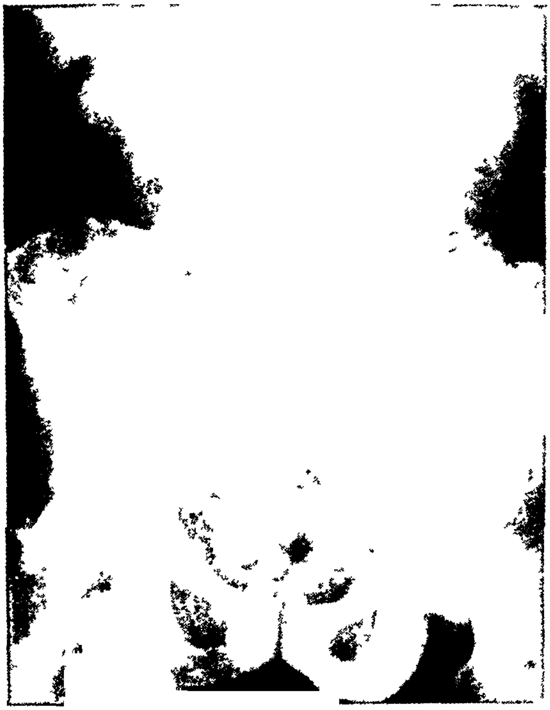

Fig. 1.—Plain roentgenogram of abdomen, showing chain of large stone shadows on right side of pelvis.

unsuccessful in entering the desired portion of the duplicated ureter. Although the upper segment was not demonstrated, the cystoscope revealed a mound or prominence in the region of the right ureteral orifice. This was interpreted as a dilated intramural segment of ureter.

On the strength of a bifid condition on the left, a strong suspicion of duplication on the right, the deformity in the right ureterovesical orifice, the hematuria and the history of having passed many calculi, a tentative diagnosis of large ureteral calculi in the nonfunctioning upper half of a completely duplicated ureter was made.

The next thing was to decide what to do. The calculi could probably be removed by a cystotomy and ureterotomy, but this would *only leave a dilated and diseased ureter, with* a poorly functioning kidney, susceptible to prolonged morbidity. A heminephrectomy with its accompanying ureterectomy would be ideal, but hardly in a man 62 years old, with the possibility of future atrophy and infection of the remaining portion of kidney. It was decided, therefore, to do a complete nephrectomy and to remove both ureters down to the bladder.

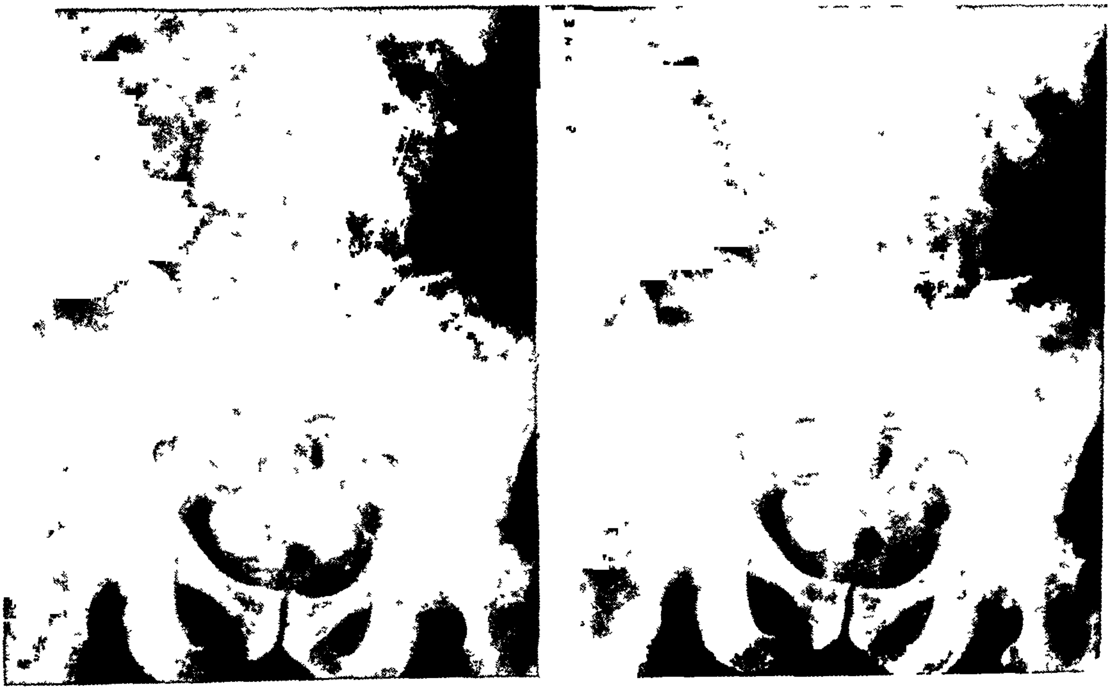

Fig 2.—Intravenous pyelograms showing complete duplication on left Chain of stone shadows does not appear to be in ureter. Only one ureter noted on right, but pyelogram appears to be in lower half of kidney

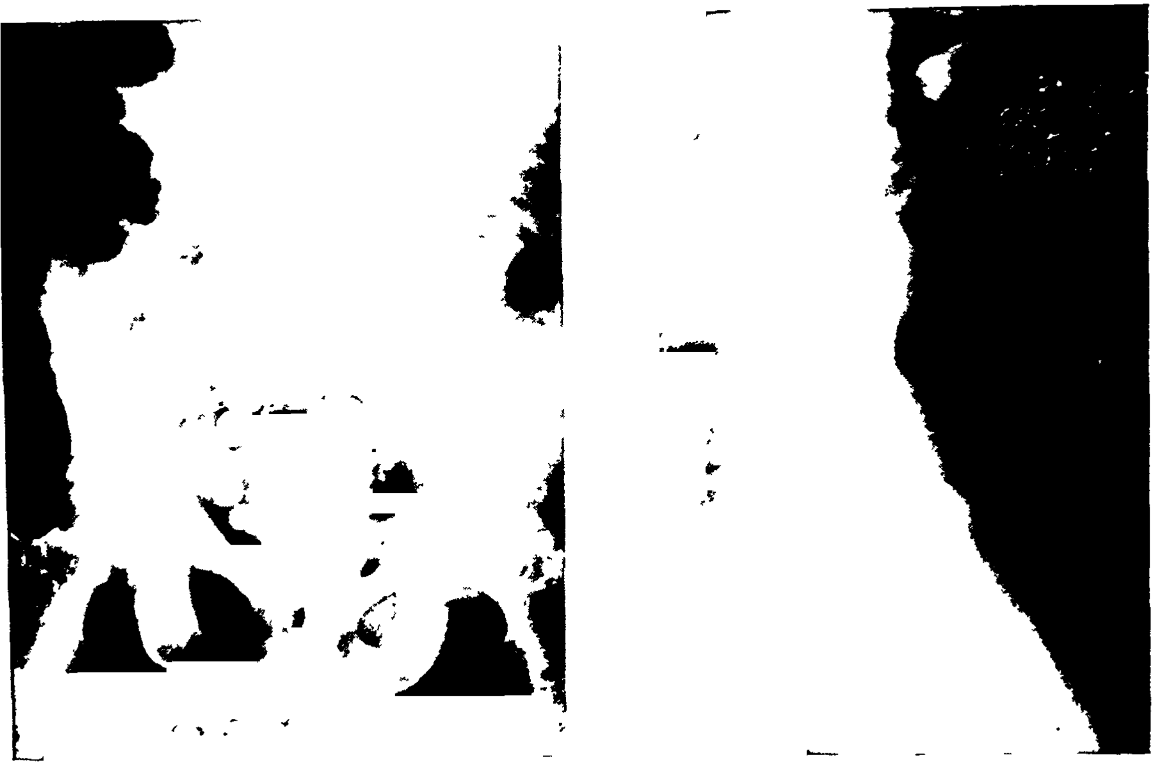

Fig. 3.—Air contrast study of bowel in anteroposterior and lateral position. Stone shadows are not in bowel.

Accordingly, on May 27, a right Gibson incision was made, the ureter was identified close to the bladder and the large calculi palpated within a greatly dilated ureter. Since only three calculi could be palpated in this dilated portion of ureter, the bladder had to be opened to locate the remaining three. When the bladder was opened the prominence noted cystoscopically could be seen in the right trigonal area. A small incision was made over this prominence, and four calculi were removed by "milking" them down the ureter and through the incision. The remaining two calculi were removed through a ureterotomy incision. A cystostomy was completed. The two ureters were doubly clamped at the bladder, cut and tied. The ureters were freed to the lumbar region. The incision was closed with the appropriate drains and cystotomy tube. The patient was placed on his left side, and an uneventful right nephrectomy was done.

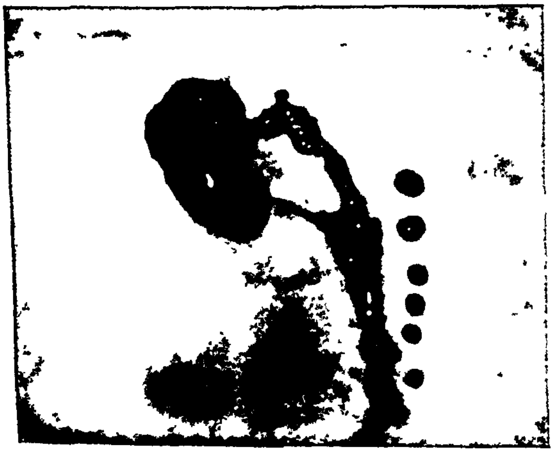

Fig. 4.—Pathologic specimen showing double ureter, with markedly dilated upper ureter. Six calculi removed from dilated ureter are also shown.

The specimen (Fig. 4) revealed a fused double kidney with two pelves and two ureters, complete to the bladder. The upper half of the kidney showed hydronephrotic atrophy, and its ureter was greatly dilated and tortuous. The lower half of the kidney, as well as its ureter, was normal.

RESUMEN

El autor presenta un caso poco frecuente de cálculos grandes y múltiples en un ureter doble completo. Se hacen consideraciones sobre el problema diagnóstica y sobre la elección de las medidas terapéuticas.

RIASSUNTO

L'autore presenta un caso insolito di uretere duplice con grossi calcoli e discute il problema diagnostico e i metodi di cura.

RÉSUMÉ

L'auteur présente un cas rare de gros calculs multiples dans un uretère double complet et discute les problèmes de diagnotic et le choix des mesures thérapeutiques.

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The lay mind seems to find it unaccountably difficult to understand the professional attitude toward the unorthodox practitioner. We accept the view of Bacon that "The weakness and credulity of man is such as they will often prefer a mountebank or a witch to a physician." We do not deny to such practitioner the possession of a degree of competence in manipulative methods: we do not doubt either his sincere devotion to his task or his personal integrity. nor do we disparage the irresponsible gay confidence he has in his own very limited powers. We do not grudge him success though we recognise its extreme infrequency. and are not unfamiliar with its perilous accompaniments. its fatal disasters. Our opposition rests upon something more fundamental than this: upon his complete lack of training both in the most elementary principles which underlie all powers of diagnosis, and in the appropriate application of those principles to treatment. Such principles are not empirical, they are based upon a multitude of sciences. upon physiology. anatomy, pathology. radiology, and the like. and upon that trained clinical observation which seeks to determine not only the morbid local condition but also its correlation with the general state of the patient. It is only by such enquiry that an exact diagnosis can ever be made.

—*Moynihan*

Plastic and Reconstructive Surgery

Reconstruction of the Philtrum in Cases of Cleft Lip

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A general discussion of the formation and functions of the philtrum and the cutaneous upsweep is presented and a new surgical approach to their formation is advocated. This has been used for single and double cleft lips which have already been subjected to operation.

The authors hope that, from their future investigations and additional creative ideas from fellow plastic surgeons, these surgical additions to the repair of cleft lip will lead, from a functional and cosmetic point of view, to the final goal, a normal lip.

THIS preliminary report is presented primarily to demonstrate an operative procedure designed for providing some definitive finishing touches to cleft lips. Secondarily, it is submitted to stimulate interest in the philtrum and the "cutaneous upsweep," as there is little information in the literature with regard to the anatomic or physiologic character of these two structures.

Reconstruction of cleft lips and their attendant deformities has progressed to such a fine degree of surgical artistry that the original defects are practically imperceptible. When the patient is seen early and the repairs are in the capable hands of an experienced plastic surgeon, all of the old stigmas of cleft lip abnormalities have been practically eliminated. Existing scars have become hairline and in many instances are cleverly placed for partial concealment and minimum interference with the normal growth of the lip. Lip repairs are well designed and executed to give a final result near the norm. The function of the lip has been revived; growth progresses normally, with a minimum of underlying bony deformity. The nasal readjustments give satisfactory cosmetic and functional end results, and nasal growth is normal and adequate.

Critical examination, however, by the discerning plastic surgeon reveals obvious anatomic differences that immediately single out the operatively treated cleft lip from the normal uncleft lip. The differences are: (1) the absence or lack of development of the normal philtrum in cases of cleft lip, either preoperatively or postoperatively, and (2) the absence, lack of development or alignment of the normal prominence in the skin of the upper lip just above the juncture at the vermilion border. This has been called the mucocutaneous ridge, the "white line," or the "white roll" (Gillies[1]), but to identify it

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anatomically and architecturally we shall call it the "cutaneous upsweep" of the upper lip. With either unilateral and bilateral cleft lips the philtrum is poorly developed or lacking. In most cases, critical examination of the repaired cleft lip reveals that the philtrum is nonexistent. Its absence is accentuated in the presence of double cleft lip by the prominence of the prolabium and the presence of the flattened surgical juncture scars on either side of the prolabium.

According to the recent work of Marcks[2] and Trevaskis,[3] the structure we call the cutaneous upsweep is present in all cases of single or bilateral cleft lip. They claim that, although it has been recognized, it has not been utilized *per se* in the reconstruction of the newly formed lip. They have cleverly designated certain outstanding landmarks which, when brought into apposition, reestablish the cutaneous upsweep into a natural "cupid's bow." By utilizing the established surgical planning (Tennison[4]) in combination with the designated cutaneous upsweep landmarks, they have made progress toward overall perfection of lip repair in this area. Normally the degree of development of the philtrum and upsweep is more pronounced in some persons than others and is more apparent and prominent in children than in middle-aged or older persons. In a child the upper lip is pouting and thrown forward, because the development of the maxilla has proceeded faster than that of the mandible. Where it exists, this necessarily holds the lip up and out like a curtain. The position of the upper lip on the face depends

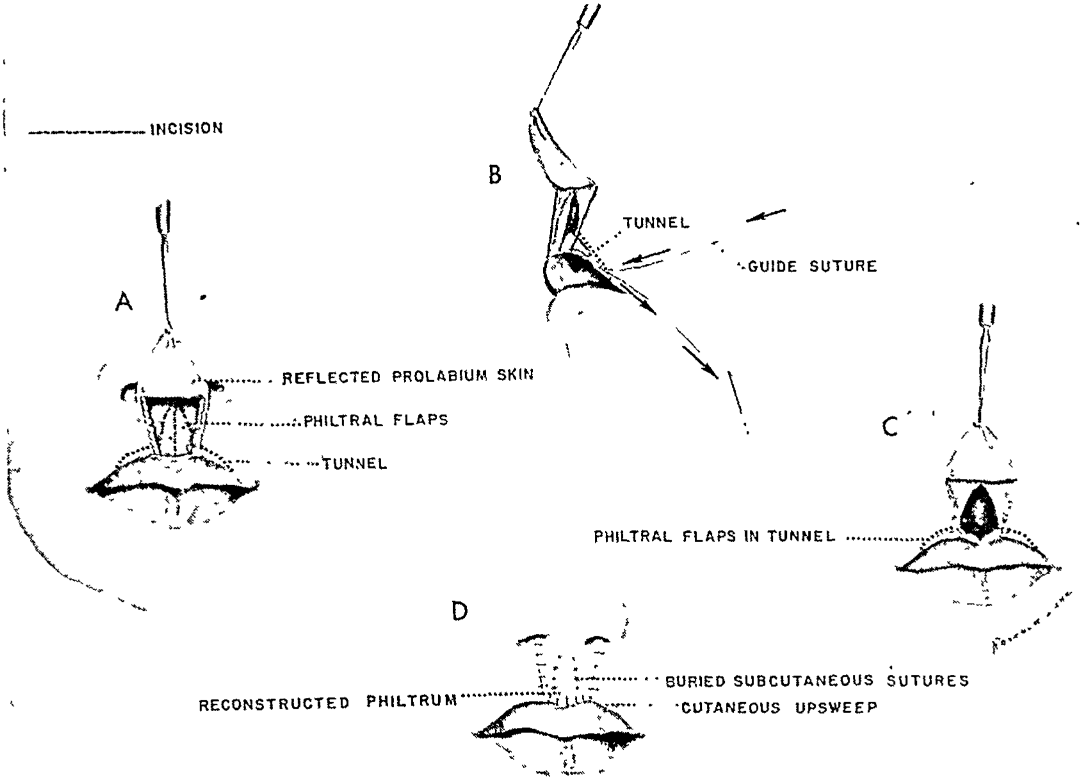

Fig. 1 (see text).

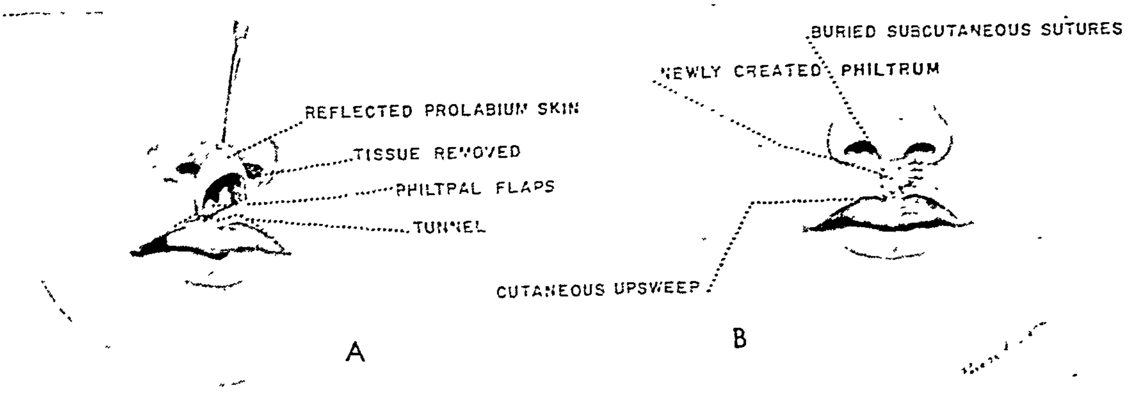

Fig. 2 (see text).

on the way in which it is hung on the maxilla.

In our opinion the lateral prominences of the philtrum and the cutaneous upsweep represent a thickening of the subcutaneous tissue in these areas. There is some elongation of the skin itself, so these areas are like a reverse fold. To theorize, the philtrum, besides being the juncture point of the two medial nasal processes, has elevated sidewalls to permit nasal secretions to run down either side of the upper lip, and the cutaneous upsweep acts like a gutter for perspiration or nasal secretions, to drain them away from the oral cavity, in somewhat the same way that vibrissae in the nose act as strainers and the eyebrows and eyelashes keep normal cutaneous secretions and external foreign bodies from the eyes. The philtrum and cutaneous upsweep are also so constructed, in our opinion, as to permit the many and varied motions of the lips in all directions, supplying a little extra material when play is needed in the upper lip. The lip then does not appear tight but will have some redundant material that can be utilized when needed, in a springlike action in which the upper lip is brought out to its fullest extent of motion and then back to normal. The excess material of the philtrum lies in a reverse folded position, so to speak, when the lip is not moving, to act as a ready reserve for all complicated lip motions and yet spring back to the norm when the lip is at rest.

In some instances of single or double cleft lip the philtrum seems to be partially present, but it is possible that at the time of operation certain areas were cut across and this philtrum relation is disturbed, or when the lip is reconstructed it is so tight that the philtrum itself is made smooth by continuous lateral shortening of the upper lip. The cutaneous upsweep is present in cases of cleft lip, but its anatomic presence has not been sufficiently utilized. Many of the surgical procedures recommended for reconstruction of the lip have entirely ignored the existence of a philtrum or a cutaneous upsweep, so that these areas have been cut across, replaced by scar tissue and not properly brought into the picture of overall lip repair. The absence of the normal philtrum and the cutaneous upsweep in the final repair is thus too obvious. It would seem to us that basically, to obtain a good repair, the lateral segments of the lips must be freely mobilized and replaced so that they are attached to the underlying maxilla in a manner more nearly normal; then one can proceed with the lip repair. Final adjustments of the operative scar of the lip can be made more easily at a later date, when the alveolar arch and premaxilla come into normal alignment.

In reporting some of the surgical work in this direction that we have been doing for the past five years, it must be said that our efforts are still in the formative stage. Most of our work has been directed primarily toward the formation of the philtrum and cutaneous upsweep in single and bilateral cleft lips that have been surgically treated in the past. It is our hope that we shall be able to incorporate some of our observations with regard to the philtrum and cutaneous upsweep into primary repair of single and bilateral cleft lips. In secondary repair of the double cleft lip, when the philtrum and the cutaneous upsweep are absent, the external lip scars are excised superficially, a small mound of scar being left underneath. This dermocicatrix will be used as a unipedicle, bipedicle or attached graft rotated into position to assist in the formation of the normal philtral borders. The skin of the prolabium is elevated. A section of subcutaneous tissue and scar is incised superiorly and laterally in the philtral area and turned down as a flap. This is about 4 to 5 mm. thick. This flap is dissected downward to the vermilion border where the normal low point of the cupid's bow would be and is then split in half (Fig. 1*A*). A tunnel is made under the skin in both halves of the upper lip where the cutaneous upsweep would normally be. The cicatrix type-grafts, being attached in the midline, are then threaded into the prepared tunnels and fixed (Fig. 1, *B* and *C*). The prolabium skin flap is then sutured into its bed with silk sutures passing through the mucosa of the upper lip, catching the prolabial flap subcutaneously and being tied on the undersurface of the upper lip. This eliminates the central dead space and indents the prolabial skin to form the new philtrum without external suture marks: occasionally we have tied an external central bolster into the new philtrum with through-and-through silk sutures to exert additional external pressure and accentuate the new philtrum. The skin of the prolabium is then brought down into position and tailored into the cupid's bow effect (Fig. 1*D*).

In the secondary repair of the single cleft lip the skin of the prolabium is elevated in the philtrum area. The subcutaneous and cicatricial flap is brought down in the same manner as in the double lip philtral formation. The excess material is discarded, and the subcutaneous and cicatricial grafts are placed in the cutaneous upsweep tunnels as they are needed. The philtral sutures are the same, and closure of the skin and total lip repair are done in the usual manner of Le Mesurier[5] and Tennison[4] or by other standard technics. This operative procedure forms the philtrum and rebuilds the cutaneous upsweep at one maneuver (Fig. 2, *A* and *B*).

In primary repair of a single lip the addition of the philtral excision to the accepted lip repair actually creates a central lip depression to simulate the normal philtrum. The excised philtral material may then either be discarded or used, as attached or free grafts, for subcutaneous filling where needed. Some of this excess material may be utilized at the scar juncture points.

We suggest that in primary double lip repair the philtrum be formed in the same manner, by excising the prolabial central prominence and then utilizing the vermilion cutaneous upsweep landmarks, as described by Marcks[2] and Trevaskis,[3] plus the accepted double lip surgical planning to complete the final lip closure.

SUMARIO

Apresentam uma discussão sobre a formação e função do filtrum e da dobra

cutanea superior assim como uma nova via de acesso para sua formação. Essa técnica foi usada para os fissuras unilaterais e bilaterais que já tinham sido operadas. Os AA. tem esperança que, no futuro de suas investigações á respeito, com a contribuição de novas ideias de outros colegas, possam chegar a obter uma correção estitica e funcional com semelhança de um labio normal.

ZUSAMMENFASSUNG

Nach einer allgemeinen Erörterung der Bildung und der Funktion des Lippenphiltrums und der Aufwärtskrümmung der Lippenhaut schlagen die Verfasser einen neuen chirurgischen Zugangsweg zur plastischen Herstellung dieser Gebilde vor. Ihr Verfahren ist zur Behandlung von Hasenscharten einer und beider Lippen, an denen schon vorher operative Eingriffe vorgenommen waren, angewendet worden.

Die Verfasser hoffen, dass ihre weiteren Untersuchungen und zusätzliche konstruktive Vorschläge anderer Kollegen aus der plastischen Chirurgie zu dem in der Reparatur der Hasenscharte angestrebten funktionellen und kosmetischen Ziel, der Wiederherstellung einer normalen Lippe, führen werden.

RESUMEN

Se presenta un trabajo que trata detenidamente la formación regular del surco mesolabial y la capacidad de succión así como del procedimiento operativo en casos de hendidura labial simple o doble.

Los autores confían que que, de las investigaciones futuras y de las ideas creadoras de los cirujanos plásticos pueda llegarse facilmente a obtener los mejores resultados desde el punto de vista estético y funcional; es decir, a un labio prácticamente normal.

RÉSUMÉ

Les auteurs présentent une discussion sur la formation et les fonctions du sillon médian sous-nasal et recommandent une voie d'approche chirurgicale utilisée avec succès dans les cas de becs-de-lièvre simples ou doubles ayant déjà étét opérés antérieurement.

Les auteurs souhaitent que la poursuite de leurs recherches personnelles et l'apport des spécialistes de chirurgie plastique permettront d'atteindre le but recherché, soit d'obtenir dans ces cas une lèvre normale aussi bien du point de vue fonctionnel qu'esthétique.

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Section en Francais

L'Osteosynthese du Tibia par Coapteur

(Osteosynthesis of the Tibia by Means of a Coaptor)

ALBERT DUCHENE, M.D., F.I.C.S.*

ANS-LIEGE, BELGIUM

A. INTRODUCTION. — J'écourterai volontairement ma communication pour me permettre de vous présenter un film sur l'ostéosynthèse du tibia par coapteur.

Ce film a été pris hâtivement à votre intention et est forcément imparfait. Il démontre néanmoins l'essentiel: la réalisation de la coaptation et de la compression interfragmentaire.

Comme tous les chirurgiens nous avons appliqué aux fractures du tibia, la gamme variée des traitements classiques: le traitement orthopédique, le plus souvent; des ostéosynthèses mineures spécialement des vissages et enfin des ostéosynthèses robustes par plaques, clous et coapteurs.

Ces dernières années, nous nous sommes intéressé spécialement à l'ostéosynthèse par coapteur et nous avons réalisé plus de 200 ostéosynthèses sur les divers segments osseux dont une bonne cinquantaine au tibia.

B. *Caractéristiques de l'ostéosynthèse avec compression.*—L'ostéosynthèse avec compression réalise les trois caractéristiques suivantes: le montage robuste, la coaptation parfaite et la compression interfragmentaire.

1. *Le montage robuste* libère le blessé de la servitude du plâtre et lui permet une évolution post-traumatique confortable par une mobilisation immédiate des muscles et des articulations. Il prévient l'atrophie et les raideurs, séquelles orthopédiques fréquentes, dont la récupération complète par un traitement physiothérapique correct, est toujours aléatoire. Car les séquelles cliniques de l'immobilisation ont un substratum anatomique et histologique bien démontré par les expérimentateurs. Des auteurs italiens Scaglietti, Molfeto, Mastromarino, Maiotti, etc., ont étudié les altérations histologiques survenues à la tibio-tarsienne du chien, à la patte postérieure du lapin après immobilisation. Ils ont observé qu'après 5 jours déjà chez le lapin—et les lésions s'aggravent au fur et à mesure—il existait une réaction oedémateuse au niveau des parties molles périarticulaires, une atrophie diffuse du membre, une hyperémie congestive de la synoviale, plus tard une réaction réticulohistiocytaire de la synoviale, des dépôts hématiques et fibrineux dans l'articulation, des érosions du cartillage articulaire. A la levée de l'immobilisation, et ceci confirme les constatations cliniques humaines—l'oedème réapparaît tandis que la raideur articulaire s'aggrave pour un temps. Après un certai délai se produit une régression progressive des altérations mais la cicatrisation fibreuse de la synoviale et des lésions cartilagineuses laissent des traces irréversibles influencant

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définitivement la fonction. Un autre méfait de l'immobilisation est l'ostéoporose métaphysaire et tarsienne que nous n'observons pas chez nos opérés précoces immédiatement mobilisés, à quelque moment que ce soit et nous avons vu évoluer des pseudarthroses du foyer fracturaire mobilisées sans aucune décalcification sous-jacente. L'ostéoporose post-traumatique à son degré radiologique n'est pour nous qu'une ostéoporose d'immobilisation (radio n°8).

2. *La coaptation parfaite* est nécessaire du point de vue technique pour réaliser la compression. Elle n'est pas indispensable en soi. Le traitement orthopédique peut donner d'excellents résultats en dépit d'une réduction certes équilibrée mais bien imparfaite du point de vue anatomique. C'est pourquoi nous renonçons à l'ostéosynthèse mineure, ayant comme visée exclusive de parfaire une réduction qu'il faut étayer par appareil plâtré. Dans l'ostéosynthèse avec compression les corticales doivent se juxtaposer anatomiquement pour permettre un contact intime et une impaction au niveau du tissu spongieux.

3. *La compression interfragmentaire* ou axiale a été bien étudiée par Danis qui a attiré notre attention sur son influence favorable et a pu conclure de son expérience que le contact intime et la compression sont des facteurs de consolidation. Du reste, il est d'observation clinique constante *qu'un diastasis interfragmentaire,* orthopédique par traction excessive, ou opératoire par coaptation non satisfaisante, est facteur de retard de consolidation ou de pseudarthrose. Que d'autre part, une *fracture engrenée* consolide toujours très rapidement et qu'il nous coûte de devoir la désengrener pour parfaire une réduction.

Certes, l'engrènement traumatique n'est pas exactement comparable à la compression opératoire. Dans le 1er cas la corticale d'un des fragments vient s'emboutir dans le tissu spongieux de l'autre. Dans le 2ème cas les corticales se font vis-à-vis et il n'y a d'engrènement qu'au niveau des spicules de tissus spongieux, engrènement, interpénétration cependant réel.

Fig. 1.—J. ....., Georges. Ostéolyse face interne du tibia. 3 mois et demi après l'ostéosynthèse.

D'autre part, nous connaissons depuis Delbet l'action favorable des appareils de marche et de l'appui.

Quand nous enclouons un col fémoral nous n'omettons jamais de marteler le grand trochanter pour obtenir l'impaction.

Si nous envisageons les résultats de l'enclouage centro-médulaire il est remarquable de constater la constance des résultats au niveau du fémur où s'exerce la compression par le poids du corps lors de la marche, et l'inconstance des résultats au niveau de l'humérus. Nous avons eu nous même et observé ailleurs des cas de pseudarthroses d'humérus pourtant correctement encloués.

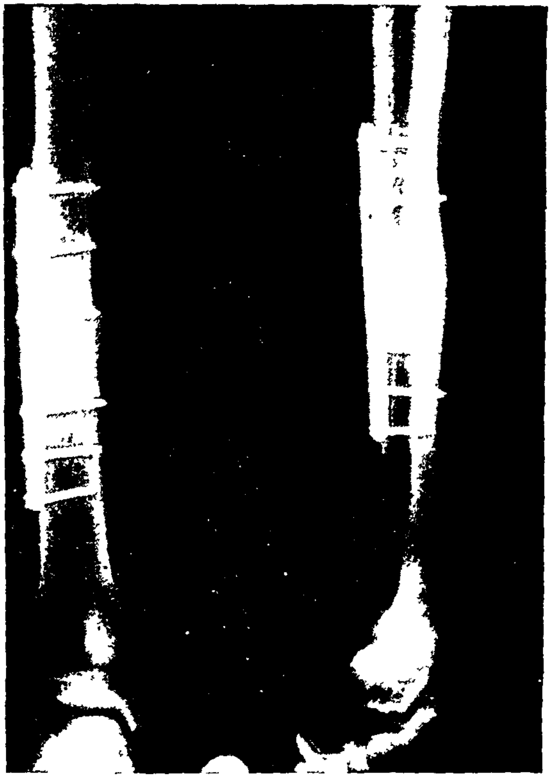

Fig. 2.—J . ..., Georges. Même cas après 8 mois—L'appui a été interrompu. L'ostéolyse a complètement disparu et le cal se présente presque comme un cal primaire.

Enfin les expériences d'Eggers nous fournissent en quelque sorte une preuve de laboratoire sur *l'effet de la compression.*

En découpant sur un crâne de rat trois côtés d'un carré et en exercant à l'extrémité libre du volet une compression volontairement excessive Eggers constate qu'à ce niveau il y a ostéolyse, qu'à mi-distance il y a consolidation et qu'à l'extrémité fixe où il n'ya pas de contact, il n'ya aucun phénomène ostégénique.

Ceci démontre l'influence de la compression et son influence favorable ou défavorable sur la consolidation. En pratique on peut admettre que la pression exercée par la compression opératoire ne dépasse pas le poids du corps et ne provoque jamais d'ostéolyse à l'endroit de compression maximale.

C. *Indications de l'ostéosynthèse par coapteur.*—Je tiens à signaler que la méthode ne s'adresse pas aux fractures les plus complexes ni aux fractures proches des épiphyses au delà des 2/4 moyens. Une première indication est fournie par les fractures isolées du tibia avec glissement d'un fragment et léger diastosis, fracture isolée sans lésion ni subluxation du péroné, dont nous savons la lente consolidation.

C'est pour ce type de fracture que certains auteurs ont préconisé l'ostéotomie du péroné. La consolidation avec le coapteur a toujours été obtenue dans les délais normaux et trés confortablement pour le blessé.

Une deuxième indication est constituée par les fractures transversales ou légèrement obliques.

Une troisième indication comprend les fractures avec un troisième fragment cunéiforme mais ici, le montage est d'autant moins robuste que le fragment est plus volumineux et l'appui doit être retardé. Après quelques ennuis nous sommes arrivés à la conception qu'il faut soumettre ces cas à la double ostéosynthèse.

D. *Contre indications.*—Il est une contre indication commune à tous les modes de *traitement* opératoire c'est *l'état suspect* du revêtement cutané, soit ouverture du foyer, soit dévitalisation.

Notre opinion est sévère sur l'intervention urgente des fractures ouvertes et nous estimons que toute solution de continuité cutanée en rapport avec le foyer fracturaire est une contre indication formelle au traitement opératoire *primaire.* Il faut attendre et avoir acquis la conviction que la cicatrisation s'est faite d'une façon strictement aseptique. En cas de suintement louche ou purulent, il est sage de renoncer à l'intervention et de pratiquer le traitement orthopédique. Un délai de 3 mois nous paraît nécessaire à partir de la cicatrisation pour entreprendre une ostéosynthèse secondaire à un échec orthopédique.

Il faut encore se méfier du revêtement contus par une force extérieure ou comprimé de dedans en dehors par le chevauchement des fragments ou un hématome sous-jacent sous tension et n'intervenir que s'il n'y a plus de risque de sphacèle.

C'est pour éviter le dommage cutané, que la fracture du tibia, sans préjuger du traitement ultérieur, doit être soumise d'urgence à l'extension continue qui réduit le chevauchement en même temps que la contraction musculaire et l'infiltration cutanée.

Les contre indications d'ordre mécanique propres à l'ostéosynthèse par plaque coaptrice comprennent:

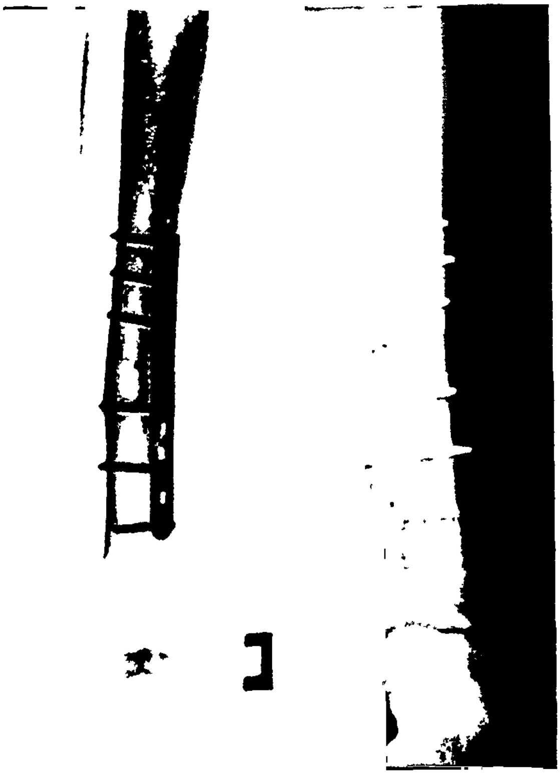

Fig. 3.—L , Jean. 6 mois après l'ostéosynthèse. Véritable cal primaire. La corticale est reconstituée anatomiquement de même que le canal médullaire est absolument libre.

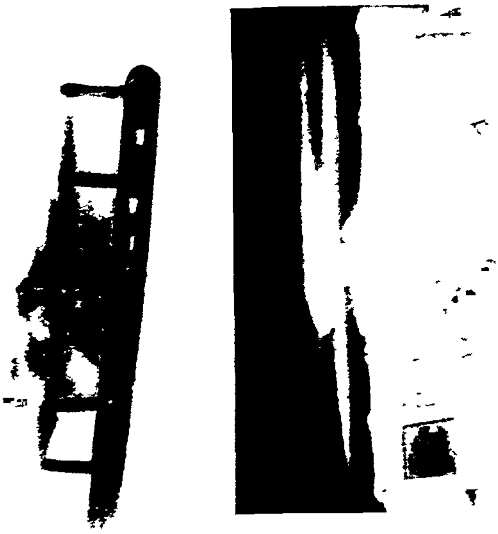

Fig. 4.—Mar......, Jean. 5 mois après ostéosynthèse parfaite. Grosse ostéolyse de la face interne.

a. Les fractures des ¼ super et inférieur où la corticale très amincie ne peut constituer un support suffisamment robuste au vissage.

b. Les fractures obliques longues ou spiroïdes à considérer comme des fractures selon le grand axe où la présence d'une plaque ne joue aucun rôle mécanique.

c. Les fractures comminutives multifragmentaires, et

d. Les fractures étagées ou segmentaires.

E. *Résultats.*—Sur 52 cas nous avons à déplorer une infection grave ayant évolué vers la pseudarthrose infectée qui n'a pu être "rattrapée" et a conduit à l'amputation. Il s'agissait d'une fracture légèrement ouverte infectée, opérée quinze jours après cicatrisation, délai trop court.

Un 2ème cas, ayant subi une ostéosynthèse par plaque sur la face interne, aprésenté au décours du troisième mois, une suppuration amicrobienne qui s'est asséchée dès l'ablation de la prothèse, mais la consolidation n'était pas apparente trois mois après. Un greffon in lay a permis la guérison Durée du traitement total: 12 mois.

Les 50 cas restants, dont l'évolution a été strictement aseptique doivent être divisés en deux groupes: un groupe de 35 cas dont la consolidation a été obtenue sans incidents en 135 jours de moyenne. Il nous a été difficile dans les *cas de cal primaire* (radio n°3) de déterminer exactement le moment de la consolidation. Un groupe de 15 cas dont l'évolution a été retardée par un incident qui nous a beaucoup préoccupé et dont la cause nous a échappé un certain temps. Il s'agit d'une réaction inflammatoire localisée a la face interne sous cutanée du tibia qui, habituelle dans le postopératoire immédiat pour évoluer vers l'extinction, augmente au fur et à mesure de l'appui et se manifeste radiologiquement au cours du 3^{eme} mois, par une image de remaniement osseux avec ostéolyse et ostéoformation. La corticale de la face interne se dilue tout en s'élargissant, la fonte parcourt l'espace interfragmentaire où apparaît un hiatus, invisible des après l'ostéosynthèse et gagne finalement la corticale opposée. Il y a pseudarthrose avec élargissement des surfaces, qui provoquera une angulation en antécurvatum après flexion ou cassure de la plaque. Ceci se passe chez les opérés continuant à marcher (radios 4 et 5). La plaque a dans ce cas été enlevée, la correction nécessaire effectuée et une immobilisation stricte dans un plâtre mouléa permis l'obtention d'une consolidation relativement rapide 3 mois. Si l'cn prescrit le repos, dès l'apparition de cette ostéolyse,

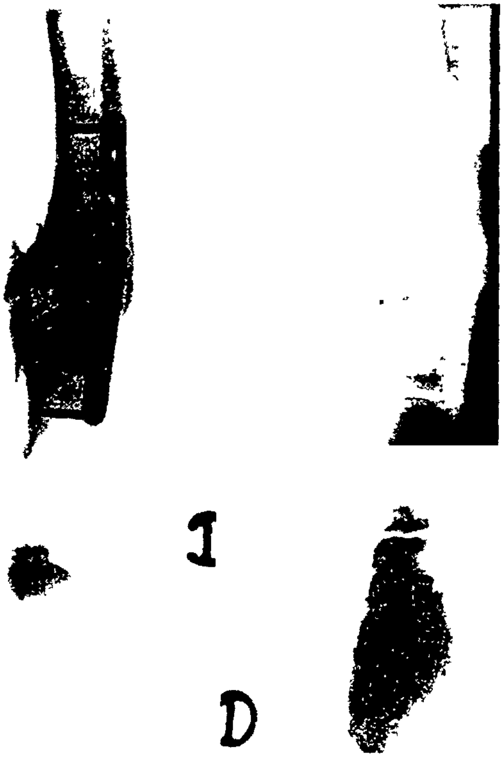

Fig. 5.—Mar , Jean. Même cas après 11 mois. Le malade a continué a marcher et l'ostéolyse a évolué vers la pseudarthrose. Fracture de la plaque.

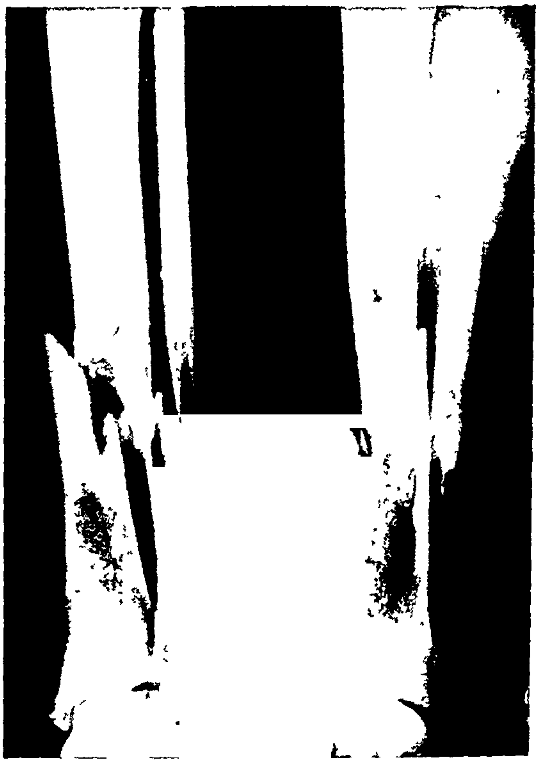

Fig. 6.—Schou ....., Pierre. Fracture avec gros 3^{eme} fragment cuéïforme encore adhérent au fragment supérieur.

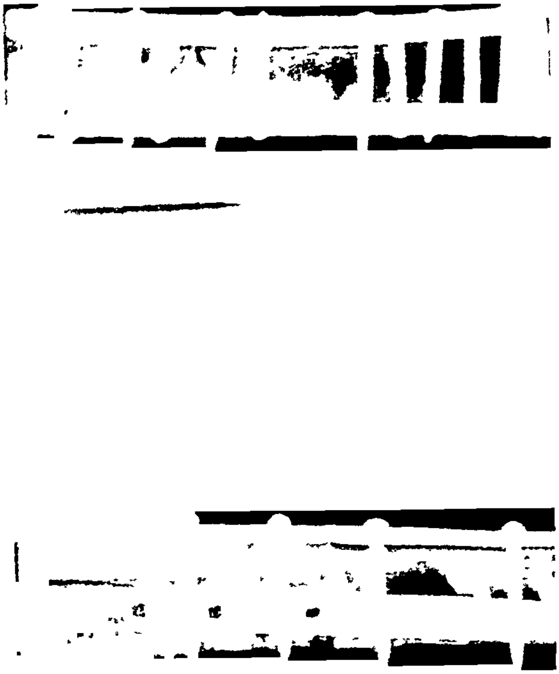

Fig. 7.—Schou......., Pierre. Même cas que 6. Double ostéosynthèse par coapteur aux faces interne et externe.

le processus s'éteint et la consolidation s'obtient avec un cal périostique parfois exubérant (radios Jans 1 et 2). Quelle est la signification de ce processus?

On peut éliminer l'infection puisque l'évolution a été aseptique dans tous les cas sauf un, de même que l'intolérance au matériel puisque l'évolution débute et reste longtemps localisée à la face interne, alors que la plaque est fixée sur la face extrene. Et les plaques enlevées, n'ont pas présenté de signe d'oxydation. Il ne parait pas qu'il faille incriminer le décollement de la surface cutanée comprenant ou non le périoste car le processus apparaîtrait constamment et non dans ¼ des cas. L'absence de couverture musculaire doit néanmoins être retenue dans l'intensification des phénomènes vaso-moteurs.

On peut éliminer enfin la compression excessive, puisque c'est à la face interne la moins comprimée que débute la réaction. Nous avons acquis la conviction que c'est précisément la fixation insuffisante de la face interne qui amorce l'ostéolyse et la pseudarthrose dont l'élargissement des surfaces osseuses peut être considéré comme une tentative d'union, contrariée.

De ces considérations, découle le remède à apporter: Repos au lit dès l'apparition de la réaction osseuse. Mais le but de l'ostéosynthèse robuste qui est non seulement la mobilisation mais aussi l'appui est alors manqué.

Nous pratiquons actuellement la fixation simultanée de la face interne; fixation sommaire par une agrafe de Dujarier, dans

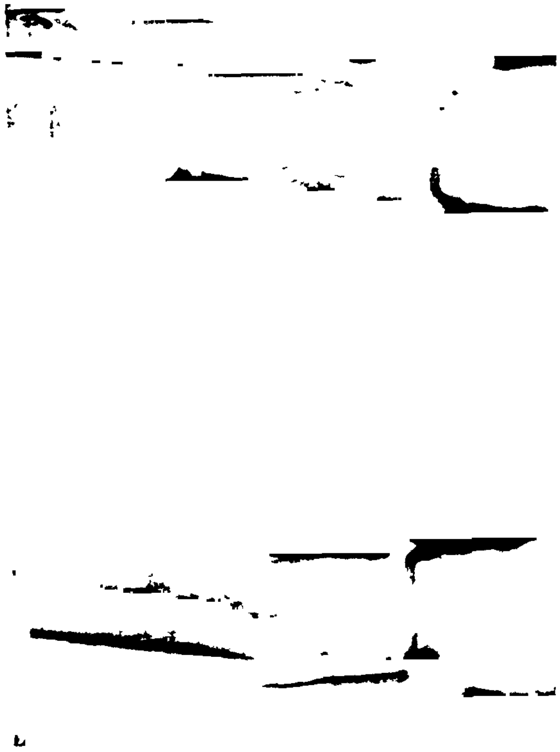

Fig. 8.—Schou , Pierre. Même cas. 24 jours après l'ostéosynthèse. L'intéressé marche. Il n'y aucune decalcification ni métaphysaire ni tarsienne. Ceci prouve que la décalcification post traumatique est exclusivement due à l'immobilisation.

les transversales; fixation par un deuxième coapteur dans les fractures obliques ou avec troisième fragment.

Les trois derniers cas ainsi traités ont évolué ambulatoirement vers une consolidation rapide (radios 6 et 7).

"The Sick Lady," Jan Steen. The artist shows us here that the mode of taking the pulse differed little in the seventeenth century from the modern way. The facial expressions, as usual, are remarkable in portraying concern and interest on the part of the physician and weariness on the part of the patient. *(Reproduced by courtesy of the Rijksmuseum, Amsterdam, The Netherlands)*

—Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S. (Edin.), F.I.C.S. (Hon.)

Editorial

Observations on the History of Physical Diagnosis: Hippocrates, Auenbrugger, Laennec

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IN a presentation of the history of physical diagnosis as represented in the works of Hippocrates, Auenbrugger and Laennec one must therefore devote chief attention to these three major figures. Nevertheless, one cannot altogether ignore the many other physicians whose contributions provide continuity to the historical narrative.

For present purposes physical diagnosis will be defined, in the traditional way, as consisting of inspection, palpation, percussion and auscultation. The problem resolves itself into determining the condition of these technics at three points in time, but no discernible circumstances that may have influenced the general development of the entire diagnostic art can be neglected.

Hippocrates.—The Hippocratic writings are involved in a complex of textual and philologic problems that probably will never be solved. There have survived from antiquity almost seventy miscellaneous and anonymous treatises, which vary in style and merit and range in date from perhaps 450 to 350 B.C. or later. These could not have been the product of one man, or even of one school. It is generally believed that part of the collection represents the work or influence of the school of Cnidos,[1] which rivaled the Hippocratic school of Cos. Following the suggestion of W. H. S. Jones,[2] I shall assume that the corpus Hippocraticum represents the library of the Coan school and as such includes not only the writings of the master and his disciples but also a variety of case notes and memoranda, and a group of incidental writings which were prepared elsewhere but were perhaps consulted by members of the school or donated to them. Since we cannot be certain which treatises were written by Hippocrates or even which were written by members of his school, it is convenient to circumvent the problem of authorship by speaking of the Hippocratians collectively.[3]

It may be observed, incidentally, that only about a third of the Hippocratic collection is available in English, a fact that demonstrates our backwardness in medical scholarship.

Among the diseases that confronted the Hippocratic physician, the commonest appear to have been pneumonia and its complications, tuberculosis, malaria, miscellaneous noneruptive fevers, tetanus and the traumas of sport and war. Especially notable is the great frequency of pulmonary and pleural disease.

Since much of physical diagnosis is based on a knowledge of anatomy, one must inquire how much anatomical knowledge the Hippocratians possessed. From

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Presented in part as a lecture at the International Surgeons' Hall of Fame, International College of Surgeons, Chicago, March 4, [illegible]

Submitted for publication Nov. 1, [illegible]

During the forthcoming months of 1959 and as long thereafter as possible, the editorial pages of the Journal of the International College of Surgeons will be occupied by presentations of rare and extraordinary historic value, the lectures presented at the International Surgeons' Hall of Fame on medical and surgical history from the earliest recorded achievements to those of our own times. We believe that Journal readers who were not able to attend the lectures will find them as exciting as did the audiences present at their delivery. The story of progress in the healing arts and the giants of medicine and surgery to whom we owe the amazing brilliance and scope of modern achievement is intrinsically thrilling and is a vital part of the education of every cultivated man and woman, inside or outside the profession. It is altogether fitting that it should appear in these pages, since the International College of Surgeons is first, last and always a teaching institution.

the surgical treatises it is evident that they had extensive exact information about the human skeleton and were able to recognize and describe with precision the distortions of contour caused by fracture and dislocation. Indeed, the surgical writings are in some respects the best parts of the Hippocratic corpus and contain much that is useful today.

The Hippocratic knowledge of human visceral anatomy was meager and fanciful. The contrast between exact knowledge of the osseous system and ignorance of the viscera suggests that the Hippocratians may have had human skeletons available, presumably from graveyards, but relied on the dissection of animals for their knowledge of the internal organs. We may offer the uncharitable suspicion that even the dissection of animals was not carried out very diligently, since the venous system as the Hippocratians described it does not exist in any mammal.[4]

We must recognize, furthermore, that the modern concept of diagnosis was alien to Hippocratic thinking. The Hippocratians placed chief emphasis on what they called prognosis. This included not only the ability to forecast the outcome in a case of disease but the ability to recognize what had already happened, i.e., to understand the entire course of the illness.[5] The closest English equivalent to the Hippocratic prognosis would probably be the expression "natural history of disease."

The manner in which the Hippocratic physician approached his patient is given in the *Prognostic:*

"In acute diseases the physician must conduct his inquiries in the following way. First he must examine the face of the patient, and see whether it is like the faces of healthy people, and especially whether it is like its usual self. Such likeness will be the best sign, and the greatest unlikeness will be the most dangerous sign. The latter will be as follows. Nose sharp, eyes hollow, temples sunken, ears cold and contracted with their lobes turned outwards, the skin about the face hard and tense and parched, the color of the face as a whole being yellowish or dark . . . If the eyes shun the light, or weep involuntarily, or are distorted, or if one becomes less than the other, if the whites be red or livid or have dark veins in them, should rheum appear around the eyeballs, should they be restless or protruding or very sunken, or if the complexion of the whole face be changed—all these symptoms must be considered bad, in fact fatal."[6]

After this description of the face the Hippocratic author describes the posture and attitude of the patient lying in bed, the spontaneous movements of his limbs, his respiration, his abdomen and so forth. Visual observation is minute and accurate. Here is another brief example, taken from *Ancient Medicine:*

"If a man who has grown accustomed, and has found it beneficial, to take lunch, should miss taking it, he suffers, as soon as the lunch-hour is passed, from prostrating weakness, trembling and faintness. Hollowness of the eyes follows; urine becomes paler and hotter, and the mouth bitter; his bowels seem to hang; there come dizziness, depression and listlessness."[7]

If such descriptions as these are compared with the perfunctory statements that distend our hospital charts and clinical journals, the logical conclusion is that in the application of straightforward visual observation the profession has retrogressed since the time of Hippocrates. Modern case reports are altogether too full of the conventional "well-developed, poorly nourished white male," hastily examined and carelessly described. This comment is offered especially to those who believe that the history of medicine is a record of continual progress. The Hippocratians saw; modern physicians and surgeons often do not even look.

The Hippocratians inspected the orifices of the body and have left descriptions of diseases of the pharynx, palate, and uvula.[8] As the surgical treatises prove, they also used rectal speculums.

Their observation included not only the patient himself but his urine, feces, sputum and secretions. Valuable prognostic indications were gathered therefrom. For example, there are many mentions of the changes in the appearance of the sputum and of the urine during the course of pneumonia. Significant details of this type are often overlooked nowadays or replaced by routine laboratory analyses, or—even worse—by routine laboratory reports.

The Hippocratians palpated abscesses and tumors. There is no convincing evidence that they percussed the abdomen or the chest, but it is clear that they palpated the abdominal viscera and made note of the size and hardness of the liver and spleen.[9] They observed pulsations in various parts of the body but appear to have paid little attention to the pulse as a sign of health or disease.[10]

There are numerous references to auscultation. Thus, in a case of "false membranes" in the pleura:

". . . when the lung falls against the side of the chest, the patient has cough and orthopnea . . . and a noise like that of leather is heard."[11]

On "dropsy of the lung" (hydrothorax?):

"If dropsy forms in the lung, and if you apply your ear to the chest and listen a long time, a sound is heard within like that of vinegar . . .[12] The incision is made where the sound is heard."

There are many incidental references to thoracic and respiratory noises, but the modern reader is often left in doubt as to whether these were detected by listening at the patient's mouth or by immediate auscultation of the chest.[13]

The practice of succussion is mentioned repeatedly. Thus, in a case of empyema:

". . . shake the patient, while keeping your ear against the chest, in order to determine on which side the signs are . . . If, because of its thickness, the fluid does not fluctuate and no noise is made in the chest . . . do not let yourself be fooled, but know that the chest is full of pus."[14]

These passages make it evident that the ancient Greek physicians practiced auscultation. They knew the pleural friction sound. They *may* have heard rales. They used succussion when empyema was suspected, and they recognized that this test sometimes failed. As Laennec showed, succussion would not yield a positive result unless the pleural cavity contained air as well as fluid.

Unfortunately for those who would like to draw quick inferences, the passages that mention auscultation and succussion are taken mainly from such works as the treatise *On Diseases*, the treatise *On Internal Affections* and the second, fifth and seventh books of the *Epidemics*. These works are generally held to be Cnidian rather than Hippocratic. An additional thorn on the rose is the fact that the *Cnidian treatises have not been translated* into English; hence the American physician must consult the French translation of Littré or the German translation of Kapferer unless he insists on the pleasure of reading the Greek.

Whether any specific detail of medical technic should be attributed to the school of Cnidos or the school of Cos is beside the point. In the present state of scholarship one must take the Hippocratic writings as a whole, looking to the anonymous authors for their high level of bedside medicine, for accuracy and minuteness of observation, for recognition of constitutional factors in disease, for an appreciation of the relation between disease and its background and for their enunciation of principles of ethics. In this lies the merit of Hippocratic medicine.

From Hippocrates to Auenbrugger.—Between the composition of the Hippocratic treatises and the publication of Auenbrugger's book on percussion a period of approximately two thousand years elapsed. During this interval there were several general tendencies that ultimately led to the development of physical diagnosis. First and most fundamental was the development of anatomy by Vesalius and his successors during the sixteenth and later centuries. Second was the slow accumulation of clinical knowledge bequeathed by the Greeks and Arabs and amplified by Sydenham, Boerhaave, Van Swieten and a legion of others. The simultaneous availability of clinical and anatomic knowledge led to the development of clinicoanatomical correlation as seen in the writings of Benivieni, Bonet, Lancisi, Wepfer, Valsalva and Morgagni.[15] Physiology, too, had made great advances—witness the work of Harvey, Servetus, Sanctorius and Haller[16]—but these as yet had relatively little recognizable influence in clinical medicine, especially in the field of clinical diagnosis.

It is also worth noting that in Auenbrugger's time Hippocrates and Galen were still alive, in the sense that their writings were ordinarily read by physicians and students and their doctrines still received at least partial acceptance.

Despite great advances, in the eighteenth century as in the days of the ancient Greeks, the physician who attempted to discover what was wrong with his patient had at his disposal mainly the case history, the external appearance, the pulse and the appearance of the excretions. If he was an up-to-date eighteenth-century thinker he might attempt to predict the gross autopsy observations. He had virtually no way of ascertaining the exact location of an internal disease during the lifetime of the patient.[17] The entire concept of anatomical localization[18] is closely linked with the progress of physical diagnosis from Auenbrugger to Laennec to Roentgen.

Auenbrugger.—Leopold Auenbrugger (1722-1809), the son of an Austrian innkeeper, studied medicine in Vienna and ultimately joined the staff of the Spanish Hospital in that city. In addition to being a physician he was a gifted amateur of music and composed the libretto of an opera written by Mozart's enemy Antonio Salieri."[19]

After seven years of clinical trial supplemented by autopsies and by experiments on cadavers, Auenbrugger published his *New Discovery* (of percussion of the chest). Very significantly, this book appeared in 1761, which was also the year of publication of Morgagni's *De Sedibus.*

Auenbrugger's brief text is arranged as a series of fourteen Observations, divided into forty-eight Sections plus scholia, the arrangement reminding one of Euclidean propositions or Hippocratic aphorisms. The Observations deal successively with the normal percussion tone, the method of percussion, abnormal percussion tones, and the abnormal signs associated with various acute and chronic diseases of the thoracic organs.

For examination by percussion Auenbrugger recommended that the patient's shirt be drawn tightly over the chest or that the hand of the physician be gloved. The thorax was struck with the tips of the fingers "brought close together and at the same time extended." The examination was conducted during inspiration, during expiration and at the end of a full inspiration. By this difficult technic Auenbrugger was able to distinguish the normal percussion note and three abnormal forms of resonance: *sonus altior,* which corresponds approximately to tympany; *sonus obscurior* which is dullness, and *sonus carnis percussae,* or flatness. About two-thirds of the short treatise is devoted to the percussion tones associated with various acute and chronic diseases of the thoracic organs. One section, notably candid, discusses those diseases of the chest which are *not* revealed by percussion.

It is important to notice that Auenbrugger had considerable experience in morbid anatomy and that his thinking was directed along anatomic lines. Thus he says, in one of the earlier paragraphs of his book, that a clear and equal percussion note elicited from both sides of the chest indicates that the *air cells* of the lungs are free, and uncompressed either by a solid or a liquid body (Observation III, S 11). His descriptions of scirrhus of the lung (Obs. X, S 38) and of vomicae (Obs. XI, S 41) are extremely brief but strongly suggest experience in the dissecting room, just as his clinical notes bear the clear imprint of bedside observation. Hence Auenbrugger's name must be added to the list of clinicoanatomic correlators I have already mentioned.

Within the realm of clinicoanatomic correlation Auenbrugger added more precise *intra vitam* localization than had previously been possible. With respect to etiology and to the understanding of morbid processes, however, he contributed nothing. Thus, he says that chronic diseases of the lungs are due to two kinds of cause. The first is some hidden condition of the organs, which finally destroys them. Examples are (a) hereditary predisposition, (b) affections of the mind, especially nostalgia, and (c) occupation. Another category contains (2) "obvious causes," such as (d) a vitiated condition of the fluids, gradually produced, and (e) acute infections imperfectly cured. The vitiation of the humors arises from ingested substances that cannot be assimilated. Thus it is clear that in the thinking of Auenbrugger the newer ideas of anatomic localization were superimposed upon humoralistic concepts inherited from antiquity.

Equally reminiscent of ancient medicine is the emphasis on prognosis. Thus, under the heading of inflammatory diseases of the chest,[20] Auenbrugger lists no less than eight prognostic inferences that can be drawn from the results of percussion. Moreover, he accepted the ancient doctrine of critical days.[21] Details of this kind reinforce the strongly Hippocratic tenor of the entire book and provide additional proof of the statement previously made that Hippocrates and Galen were still alive in the eighteenth century.

It is of some interest to consider, however briefly, the origin and the fate of Auenbrugger's technic of percussion. The traditional story that the innkeeper's son had derived his innovation from watching the percussion of wine casks apparently was suggested by Neuburger,[22] who indicated, however, that he did not regard this as a fully satisfactory explanation. Auenbrugger states that clinical percussion produces "analogous results to those obtained by striking a cask . . . in different degrees of emptiness or fullness."[23] If one considers the difficulty of learning to percuss a chest and the even greater difficulty of inventing the art of percussion, one cannot help thinking that Auenbrugger's musical skill and lifelong interest in music may have contributed to his discovery.

The fate of Auenbrugger's contribution to medicine has interested many scholars, including Noltenius,[24] Neuburger,[25] Vierordt,[26] Sigerist,[27] Dock,[28] and James B. Herrick.[29] For present purposes it will be sufficient to summarize the facts and opinions assembled by these distinguished men. During the seven years of their gradual development, Auenbrugger's researches were ignored by his colleagues and supervisors in the hospital hierarchy. His book was published in a small edition in 1761. It was reissued in 1763 and 1775. In 1770 it was translated into French by a writer[30] who misunderstood the text. It received predominantly unfavorable or hostile comment from reviewers and was even the subject of ridicule. In 1808, one year before Auenbrugger's death, his work was translated into French by Corvisart.[31] Thenceforth percussion was permanently established in the practitioner's repertory.

For the initial neglect of Auenbrugger's work several explanations have been adduced. The small size of the original edition would have given no opportunity for widespread dissemination of the new method. The difficulty of the technic would have been an obstacle to its acceptance, especially by the more influential physicians, who would be too old to learn and who could more easily scoff than venture. Moreover, since percussion was a manual method, it may have been regarded as beneath the dignity of learned eighteenth-century physicians. Even more fundamental is the fact that by 1761 the basic principle of the localization of disease had not yet gained full recognition; hence Auenbrugger was ahead of most of his contemporaries. To these hypotheses James Herrick added the suggestion that the difficulties originated in certain asperities in Auenbrugger's own character, i.e., that he started the trouble by antagonizing his professors and inducing hostility in them.

Whatever the cause or causes may have been, it is more instructive to consider the stillbirth and subsequent revival of percussion against a wider frame of historical reference than has been used hitherto in analyses of the problem. The early neglect of percussion is best regarded as an instance of the opposition that is likely to arise against any important new idea in medicine and in many other fields of knowledge. This theme warrants more elaborate study than can be given it in the present essay; it is sufficient to cite here such analogies and precedents as the opposition to Harvey, Semmelweis, Pasteur, and Patrick Manson.

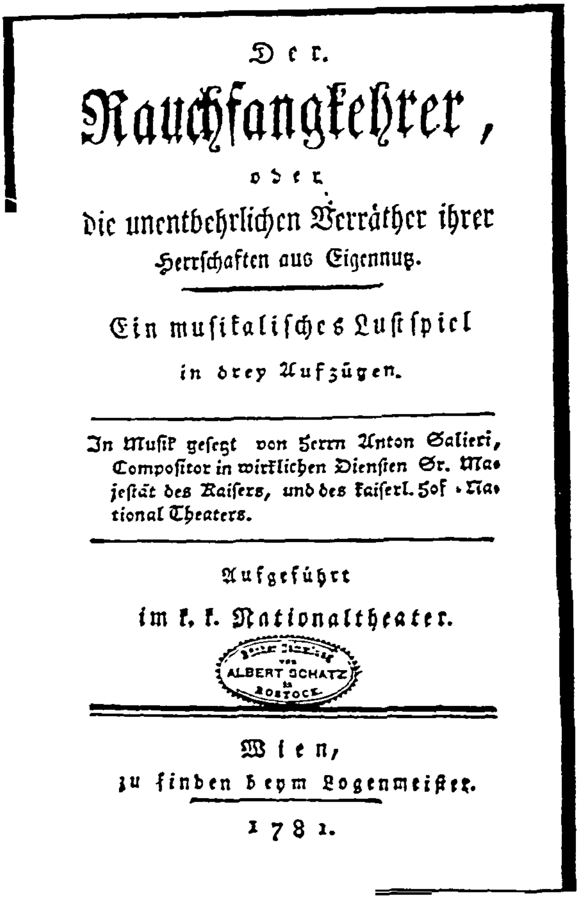
The writings of Auenbrugger and of his colleagues, his critics, his biographers and his commentators furnish an abundance of material from which one can reconstruct the background of his work and observe the social forces that influenced it.

The text of the Inventum bears the clear mark of a hospital of at least moderate size, which drew to itself large numbers of persons suffering from acute and chronic diseases of the chest. The clientele included soldiers as well as civilians. By governmental arrangement, autopsies were frequent; Auenbrugger's statements suggest that he may have performed the dissections in his own cases. The tenure of position in the hospital was long. There was a clinical hierarchy in which the higher officials were influential enough to blight any unapproved innovation. In the instance of Auenbrugger's researches the nabobs apparently chose to ignore that which they may have disdained to interrupt. The total impression obtained is that of a highly organized and conservative society, which did not absolutely forbid innovation but erected incomplete defenses against it.

Corvisart: It has already been mentioned that the revival of interest in percussion is due to Corvisart, who practiced and taught the art and also published a translation of Auenbrugger's book. Corvisart himself wrote one of the first modern textbooks of cardiology,[32] based on extensive experience at the bedside and in the autopsy room. His book is a valuable document for the period between Auenbrugger and Laennec. The student who reads Corvisart's treatise will find that great emphasis is laid on the external appearance of the patient. The examination included percussion of the chest, palpation or the cardiac impulse and pulse, and palpation of the abdomen. Auscultation was still to come. Very significantly, Corvisart's diagnoses were constantly checked by the observations at autopsy.

In the second edition of his textbook Corvisart made the following important comment:

"In one of the memoirs which I read some years ago before the Institute I proposed the idea of a work analogous to that of Morgagni but the converse of it; it would be titled On the Seats and Causes of Disease Investigated by Diagnostic Signs and Confirmed by Autopsy. But for such a work we would need at least a second Morgagni."[33]



Der
Rauchfangkehrer,
oder
die unentbehrlichen Verräther ihrer
Herrſchaften aus Eigennutz.

Ein muſikaliſches Luſtſpiel
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von ALBERT SCHATZ in ROSTOCK

Wien,
zu finden beym Logenmeiſter.
1781.

Title-page of libretto composed by Leopold Auenbrugger for opera by Antonio Salieri. *(Reproduced by courtesy of the Library of Congress.)*

The second Morgagni, who was to complete the foundations of physical diagnosis, was Corvisart's great pupil, Laennec.

Laennec.—Laennec was a man of great natural gifts developed by extensive education. As his writings clearly indicate, he had been well trained in the classics and was able to pass independent judgments on difficult passages in the Hippocratic canon.[34] His book shows a thorough knowledge of the older literature. In this he resembled Morgagni. Like Morgagni, he also had much of the developmental outlook of the historian. Like Morgagni and Corvisart, he was critical in his evaluation of the literature and in his evaluation of current ideas and new observations. Like Auenbrugger, he possessed musical gifts, or at least musical interests.[35]

Like his distinguished predecessors, Laennec based his work directly on morbid anatomy. His text abounds in references to the anatomic foundations of the diagnostic art, and a large proportion of his book consists of meticulous descriptions of postmortem observations. Microscopic study finds no place in his thought;[36] chemistry, physiology and experimental medicine likewise receive almost no attention.

Laennec's contribution is massive—almost overpowering. Almost singlehandedly he virtually created the art of physical diagnosis as it is now known, terminology and all.[37] The reader is amazed to discover in Laennec's *Traité* a nearly complete work on the physical diagnosis of thoracic disease,[38] still interesting and useful today, despite defects in the section on cardiology. By means of auscultation added to Auenbrugger's percussion, which Laennec used and esteemed, the physician now was enabled to recognize and localize consolidation, effusion, cavitation, bronchiectasis and many other conditions *during the lifetime of the patient.* Thus the art and science of medicine attained new heights. This is strikingly shown by one passage in Laennec's chapter on bronchiectasis. Here he describes in detail the history of a 41-year-old coachman in whom he observed signs of cavitation at the apex of the left lung, left-sided bronchiectasis and, subsequently, central pneumonia in the right lung. The autopsy confirmed these diagnoses exactly. Since Laennec apparently suspected that so high a degree of diagnostic precision might not be believed by his readers, he appended in a footnote the names of eleven witnesses.[39] Corvisart's desire for a work on the locations of diseases investigated by diagnostic signs was now handsomely fulfilled.

Laennec's contribution had several important implications. First, the art of diagnosis as he found it and as he left it was based on morbid anatomy but remained focused *at the bedside,* as it had been since the days of Hippocrates. There was nothing connected with auscultation which had to be done in a laboratory, and there was nothing that would take the physician away from the patient.

Second, as Laennec recognized, the new art of physical diagnosis with anatomic control could be learned in a hospital only. Only in a hospital could interesting cases be found in sufficient number and variety, and only in a hospital was it feasible to perform autopsies.[40] The educational implications of this fact have been discussed by Ackerknecht.[41]

It should also be recognized that the achievement of Laennec was related to a particular system of hospital administration. The hospitals of Paris were run, in true French style, by a centralized agency. To this agency a physician could apply for cases of whatever special type interested him. Thus Laennec had at his disposal enormous numbers of cases of thoracic disease.

Third, auscultation made possible the early recognition of pulmonary disease. Especially with regard to tuberculosis, this fact was of monumental importance to the public health.

Fourth, the establishment of the technic of diagnosis *intra vitam* paved the way for some of the great clinical portrayals for which the nineteenth century is famous.

After Laennec the art of physical diagnosis was to undergo improvement at the hands of Piorry, Skoda, Stokes and others. At the end of the nineteenth century came the introduction of roentgenology. Detailed study would probably show that roentgenology at first stimulated the art of physical diagnosis but ultimately forced it into decline.[42] These considerations, however, lie outside the scope of the present study.

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2. Hippocrates. With an English translation by W. H. S. Jones (vol. 3 transl. by E. T. Withington). Loeb Classical Library. London, W. Heinemann, 1923-1931, 4 vols. See vol. 1, p. xxix. (*Note:* The author wishes to express appreciation to the Harvard University Press for gracious permission to use the excerpts that appear in the subsequent pages of this essay.)

3. A similar approach was adopted by the late W. A. Heidel in his book Hippocratic Medicine (New York: Columbia University Press, 1941).

4. See, for example, *The Sacred Disease*, VI (Loeb Library translation, vol 2, pp. 153-155).

5. "For if he discover and declare unaided by the side of his patients the present, the past and the future, and fill in the gaps in the account given by the sick, he will be more believed to understand the cases, so that men will confidently entrust themselves to him for treatment." *Prognostic I* (Loeb Classical Library, translated by W. H. S. Jones, vol. 2, p. 7).

6. *Prognostic II* (Loeb Library translation, vol. 2, pp. 9-11, slightly modified).

7. *Ancient Medicine X* (Loeb Library translation, vol. 1, p. 31).

8. See, for example, *On Diseases, II* 28-30 (Littre translation, vol. 7, pp. 47 ff.).

9. *Epidemics IV, 8* (Littre, vol. 149) enlargement of the liver; Epidemics IV, 23 (Littre V, 164 ff.) enlargement of the spleen; *Epidemics V, 1* (Littre V, 205) induration in abdomen; Internal Affections 24 (Littre VII, 229) induration and swelling of the liver; Internal Affections 32 (Littre VII, 249) stony hardness of the spleen; Int. Aff. 33 (Littre VII, 251) changes in size of the spleen.

10. This question has long been the subject of controversy. See, for example, Adams, F.: The Genuine Works of Hippocrates, London, 1849, vol. 1, p. 351. See also Littre V, 361.

11. *On Diseases II, 59* (Littre, VII, 92-93).

12. *On Diseases II, 61* (Littre, VII, 95 ff.) The Greek text is obscure as to the type of sound, but the fact that auscultation was practiced is unmistakable. For Laennec's comment on this passage, see his *Traite de l' Auscultation Mediate*, Part 1, chap. 3 (Paris, 1879, p. 25, n. 1).

13. *Epidemics V, 14* (Littre V, 215) and *Epidemics V, 55* (Littre V, 239) may refer either to rales or to snorting noises. *Epidemics VII, 12* (Littre V, 389) rasping noise in the chest and trachea. *Epidemics VII, 28* (Littre V, 401) noise came from the chest "like that made by the women who are called ventriloquists."

14. *On Diseases III, 16* (Littre VII, 153-155). See also *On Diseases II, 47* (Littre VII, 71).

15. This development has recently been described and analyzed by Dr. Paul Klemperer (J. Mt. Sinai Hosp. *24*: 589-603, 1957).

16. It is interesting that one of the few favorable reviews of Auenbrugger's book was written by Haller (Goettingische Anzeigen von Gelehrten Sachen *1*:1013-1016, 1762).

17. The utter obscurity and inaccessibility of internal diseases explains such titles as Benevieni's De *Abditis* . . . Morborum Causis (1507).

18. Virchow, R.: Morgagni and der anatomische Gedanke. Berlin: Hirschwald, 1894, 28 pp., 2d ed.

19. Der Rauchfangkehrer, Vienna 1781 and Berlin 1783. Text and libretto in Library of Congress. Microfilm of libretto in N. Y. Academy of Medicine. The libretto is anonymous but is attributed to Auenbrugger by Max Neuburger (Neuburger, M.: Leopold Auenbrugger und sein Inventum Novum, Vienna, 1922, p. 6). A scathing contemporary review (Cramer, C. F.: Magazin der Musik, Hamburg, 1783, vol. 1, p. 352) likewise does not name the author of the libretto. The convincing evidence of Auenbrugger's authorship is contained in a letter of Mozart, quoted by Neuburger (op. cit., p. 51, note 12).

20. Obs. V, §25.

21. Obs. V, §22 and 24.

22. Neuburger, M.: op. cit., p. 11.

23. Auenbrugger: Obs. III, §17.

24. Noltenius, B.: Zur Geschichte der Perkussion von ihrer Bekanntgabe durch Auenbrugger 1761 bis zu ihrer Wiederbelebung durch Corvisart 1808, Arch. f. Ges. d. Med. *1*:329-350, 403-428, 1908.

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Knowledge of percussion came to Corvisart through the writings of Maximilian Stoll. Interesting information about this transitional period in the history of percussion will be found in Clar, K.: Leopold Auenbrugger, Graz, 1867, pp. 28 ff.

32. Corvisart, J. N.: Essai sur les Maladies et les Lesions Organiques du Coeur et des Gros Vaisseaux. Paris, 1806; 2d ed., 1811; 3d ed., 1818.

33. Corvisart, J. N.: Essai sur les Maladies et les Lesions Organiques du Coeur et des Gros Vaisseaux, Paris 1811, 2d ed., p. 25.

34. Laennec, R. T. H.: Traite de l'Auscultation Mediate. Second edition (1826), reprinted. Paris, 1879, p. 25, n. 1; p. 452, n. 1; p. 647 and n. 1.

35. References to musical instruments abound in his work, e.g., flute (op. cit., p. 46), oboe (p. 53) and harp (p. 654). A murmur heard over the subclavian artery is described in musical notation (p. 743).

36. Laennec: op. cit., p. 186.

37. For information on the development of the stethoscope see (a) Laennec: op. cit., p. 5; (b) Doe, J., and Sheldon, P. B.: Bull. N. Y. Acad. Med. *11*:608-626, 1935; (c) McKusick, V. A.; Sharpe, W. D., and Warner, A. O., Bull. Hist. Med. *31*:463-487, 1957.

38. "I have attempted to present a complete treatise on the diagnosis and treatment of organic diseases of the chest." Laennec, op. cit., p. 9.

39. Laennec: op. cit., p. 134.

40. Laennec: op. cit., p. 9.

41. Ackerknecht, E.: Typen der Medizinischen Ausbildung im 19. Jahrhundert, Schweiz. med. Wchnschr. *87*:1361-1379, 1957.

42. See, for example, Williams, F. H.: The Importance of Knowing the Size of the Heart: Inaccuracy of Percussion in Determining it as shown by X-ray Examinations, Med. Communicat. Mass., M. Soc. *18*:173-188, 1899.

* * *

any application in a civilized community."

He describes clinically, with illustrations, the "change of sex" operation, showing exactly what it is, with its physical risks and limitations.

Three appendices and a bibliography support the text.

The book is recommended to the lay public, in the hope of better understanding of this complex problem, which is increasing rather than decreasing.

MAX THOREK, M.D.

Instrumentation in Anesthesiology. By William H. L. Dornette and Verne L. Brechner. Philadelphia: Lea & Febiger, 1959.

The authors have met the need for a concise, easily read and well illustrated book describing the principles upon which the modern electronic instruments used in medicine are based. The advances made in the understanding of physiologic processes have made it necessary to turn to electronic instruments, to go beyond the limitations of man's ordinary senses. Although this text is directed to the anesthesiologist, it is a valuable addition to the library of every doctor who wishes to make himself more valuable through the understanding of these instruments, which are daily becoming more and more a ,part of every hospital's armamentarium. It is a "must" in the library of every hospital.

DAVID KATZ, M.D.

Ptoses Abdominales et Prolapsus Pelviens: Clinique et Thérapeutique Chirurgicales (Abdominal Ptosis and Pelvic Prolapse). By Lucien Diamant-Berger. Paris: G. Doin et Cie, 1958. Pp. 194, with 119 illustrations.

Dr. Diamant-Berger points out that since the era of asepsis this branch of surgery has been the subject of more books than has any other. He did not wish to write an actual treatise on ptosis and prolapse, or a literary tome compiled from the work of many authors, or a series of reviews. On the contrary, he expressed opinions based on the problems to which he has devoted so much study and so many publications.

Ptosis of the stomach, intestines, kidneys and liver, as well as prolapse of the rectum and genital organs, is reviewed. These conditions are usually treated by various specialists, but essentially they are within the domain of general surgery. The conditions usually affect one type of patient, viz., the ptotic, thin, nervous, frail woman.

The numerous operations for correction of ptosis are relatively simple, as prolapsed organs readily lend themselves to manipulation. Some of these operations, however, may be followed by poor results, with recurrence.

A considerable portion of the book (89 of its 186 pages) is devoted to genital prolapse, which is frequently encountered in women after childbirth. The anatomopathologic aspects of various degrees of retroversion, including complete prolapse of the uterus and associated colpocele, rectocele and cystocele, are discussed in detail. Indications for corrective operation, surgical technics (of various authors) for anterior and posterior perineorrhaphy, prolapse of the uterus, etc., are presented at length.

A chapter is devoted to the correction of genital prolapse following hysterectomy. The author's technic of colpopexy, in which the relaxed vagina is fixed to the abdominal wall by means of an aponeurotic band, sutured to the dome of the vagina, is well described. He has successfully employed this operation on 20 patients, and it has been adopted by many other surgeons.

There is a chapter on nephropexy for renal ptosis. The author points out the important role of ptosis in the production of urinary, gastrointestinal and nervous symptoms. Good results depend on a judicious choice of operation. Dr. Diamant-Berger employs nephropexy, using capsular flaps which he attaches to the last ribs. The author fails to note, however, that ptosis occurs in the obese as well as the thin person.

This book is enhanced by the excellent illustrations of André Marait. The student, physician and surgeon will profit from acquainting himself with the author's thorough method of handing the subject.

—CHARLES PIERRE MATHÉ, M.D.

Groves' Synopsis of Surgery. By Cecil Wakeley. Bristol: John Wright & Sons, Ltd., and Baltimore: The Williams and Wilkins Company, 1958.

This fifteenth edition of a classic students' handbook appears only four years after its predecessor. This is because of the rapid advancements that have taken place in the interim, particularly in vascular surgery and arterial grafting and the impact of the new antibiotics upon modern surgery. The author acknowledges the help of Mr. L. T. Cotton, of King's College Hospital, with this revision. Sir Cecil Wakeley is a past president of the Royal College of Surgeons of England.

The text, as revised, continues to fulfil its original intent—to give the student and the busy practicing surgeon concise "refresher" information in a small volume that is easy to read and easy to handle. It is hoped that the book will have wide distribution in the United States, being, as it is, practically a dictionary of modern surgery.

—O. C.

Atlas of Surgical Techniques in Major Surgical Procedures: Neck, Thorax, Abdomen and Pelvic Surgery. By R. Michel-Bechet. Paris: G. Doin et Cie., 1959. Pp. 580, with 1,125 illustrations by P. Contier.

This magnificent one-volume work is timely and extremely practical. The accent is on the illustrations, which are splendid, while the text is reduced to the most necessary essentials. To use the author's own phraseology, he intended "a maximum of illustrations and a minimum of text," giving as a reason his conviction that the surgeon can thus promptly refresh his knowledge of the different steps of an operative procedure prior to its performance. He also points out that the work is intended not to replace the existing great texts on surgical technic, but to serve as a means of immediate consultation and as a refresher in anatomic and operative details.

Only the essentials are brought into sharp focus; not all surgical technics are described and depicted. The author has selected only those general surgical procedures which are in constant use, pointing out the accepted methods, the author's personal technic and his modifications of standard operations.

All in all, this is a work of extremely practical value and should be in the library of every practicing surgeon, be he specialist or general surgeon, and certainly in the hands of the student, resident and intern, as well as those who are called on to perform emergency operations.

Not enough can be said about the excellence of the illustrations. They are practical, brilliantly executed and highly instructive. The work can be unreservedly recommended, not only as a reference book but as a general aid to the surgeon. While it has particular value to those who read French, the illustrations will serve very well, for they "speak" volumes.

—MAX THOREK, M.D.

Current Therapy, 1959. Edited by Howard F. Conn. Philadelphia: The W. B. Saunders Company, 1959. Pp. 781.

With this publication, *Current Therapy* begins its second decade of service to the practicing physician. Prepared with the aid of an imposing consulting board, this edition brings up to date authoritative therapeutic procedures in all situations that confront the practitioner. The editorial policy has been altered through the years, and while in early publications two to four methods of treatment for any specific disease were described, the editor now presents more than one treatment only when major differences of opinion exist among recognized authorities. A policy of rotation of topics among authors has made for more concise presentation.

New in this edition are tables of normal laboratory values of clinical importance, a list of packaging information on all drugs mentioned and a table of pediatric dosage. The section on poisoning has been enlarged.

As every physician and surgeon knows, *Current Therapy* is an indispensable series, and should be in constant use by every practioner.

—M. T.

Abstracts from Current Literature

Carcinoma of the Breast—Radiological Aspects. Berman, H. L., Col. M.C., U.S.A., M. Ann. 27:287, 1958.

The role of radiation therapy in the definitive management of carcinoma of the breast, even at this late date, remains more or less an enigma. Statistical analyses dealing with this subject are not easy to evaluate.

In determining the indications for various methods of treatment for mammary carcinoma, one must be concerned with the extent of the disease, or so-called clinical staging. There are several classifications, most of which generally categorize all patients into four groups:

Stage 1: Small tumor localized to the breast.

Stage 2: Tumor in the breast plus limited axillary metastases.

Stage 3: Extensive local and axillary spread.

Stage 4: Distant metastases.

The author advances the following recommendations for the treatment of carcinoma of the breast:

Stage 1.—Radical mastectomy alone. The author considers information obtained by examination of the axillary contents definitely valuable. In his opinion, the overall morbidity rate associated with this procedure is not greater than that which accompanies the intensive irradiation supplemental to simple mastectomy by McWhirter's technic. This irradiation is unnecessary for patients without axillary metastases. For lesions in the medial half of the breast and for patients who have "positive" axillary nodes, postoperative irradiation to the axillary-supraclavicular area and the internal mammary chain is recommended. Notwithstanding its alleged ineffectiveness, the author is still convinced that there are instances in which the diseases may be limited to the area that can be covered by irradiation, and an occasional patient may be salvaged.

Stage 2.—Simple mastectomy and intensive postoperative irradiation (McWhirter technic).

Stage 3.—Irradiation alone. Patients in this stage have extensive disease, with such criteria of inoperability as inflammatory carcinoma, extensive edema of the skin and fixation of the tumor to the thoracic wall.

As regards the new high voltage or supervoltage machines, including the cobalt bomb and the betatron, it is unlikely that any improvement in the survival statistics will result from the use of these machines, since there is a limit to the amount of radiation the tissues can tolerate, and since surgeons have ample experience with high doses of radiation.

WILLIAM E. NORTH, M.D.

Dysfunctional Uterine Bleeding. Thomas, H. H., Southern M. J. 51:1266, 1958.

A simplified approach to this type of bleeding has become available during the past three years, with the advent of the long-acting estrogen and progesterone preparations, and this eliminates the complicated pill and injection formulas that have long been standard in the therapy of dysfunctional uterine bleeding.

The hormone preparations, used singly or in combination, have proved their value in controlling and handling abnormal bleeding.

EDMUND LISSACK, M.D.

The Scalenus Anticus and Related Syndromes. Upmalis, I. H., Surg., Gynec. & Obst. 107:521, 1958.

The author cites numerous anatomic causes that predispose to the development of the scalenus anticus syndrome by compressing the neurovascular bundle. In most of the cases depression of the shoulder, with or without elevation of the thoracic operculum, was the chief factor in causing intermittent and prolonged stretching and compression of the neurovascular bundle.

The author states that the diagnosis at times can be difficult. In general, the syndrome occurs between the ages of 20 and 60. It is more often observed in the female than in the male, especially if there is a history of trauma. The most common symptoms are pain and paresthesia of the involved arm, in areas chiefly supplied by the ulnar nerve. Physical examination may reveal no abnormalities, such as impairment of touch, pain and temperature, muscular atrophy and ischemic changes in the extremity.

Treatment is conservative, consisting of physiotherapy aimed at strengthening the trapezius muscle. Surgical treatment is indicated for patients with definite neurologic or vascular changes in the extremity if they fail to respond to conservative management.

JOHN A. ZIEMAN, M.D.

Cancer of the Ovary. Cron, R. S., M.D. Philippine J. Cancer 2:95, 1958.

The incidence of ovarian neoplasms in a hospital caring for private patients only is 9.1 per cent. Only 11.1 per cent of the tumors were malignant. Ascites was present in 247 per cent. Ovarian malignant disease is reported to be increasing, if due consideration is given for the increasing age of the American woman.

Success in treatment depends upon the histogenetic, histologic and clinical extent of the disease. The survival rate for all types of ovarian cancer is about 45 per cent. Surgical intervention is still the most satisfactory approach to treatment. Early diagnosis, however, by means of pelvic examination, is a most important factor in combating the high mortality rate of this disease. Routine radiation therapy, especially that delivered by the radiocobalt apparatus should be utilized whenever possible.

Ovarian carcinoma has often been called the "silent" tumor of the abdomen. It is true that a high percentage of such tumors produce no symptoms, and, even though routine periodic pelvic examinations are performed, symptomless carcinoma will be detected only a few times in the life of the average gynecologist.

EDMUND LISSACK, M.D.

Carcinoma of the Thyroid in Children After X-Ray Therapy in Early Childhood. Rooney, D. R., and Powell, R. W., J.A.M.A. 169:69, 1959.

Ten cases of carcinoma of the thyroid in children aged 17 or younger have been added to the recorded cases, bringing the total to at least 357. The cases of these 10 children are all of the cases of thyroid carcinoma in this age group recorded in the six major hospitals of Atlanta, Georgia. Seven of the 10 patients had been given roentgen therapy in infancy or early childhood for benign conditions. The 7 cases have been added to the reported cases of thyroid carcinoma in children after irradiation, bringing the total of 121.

Approximately one-third of all children with carcinoma of the thyroid had been treated with radiation therapy to the head, neck or thorax. This neoplasm is increasingly reported as occurring in children. The more frequent diagnosis can be correlated, among other things, with the formerly prevalent use of roentgen therapy for benign conditions in children. This correlation suggests that irradiation of the head, neck or chest in infancy or early childhood may be a causative factor in the development of thyroid carcinoma later in childhood. It it is valid one should expect an eventual decrease in the incidence of this neoplasm in children, as the practice of irradiation for benign childhood conditions decreases or is abandoned.

Small quantities of radiation in infants or young children may be followed by thyroid carcinoma, but even large doses to the thyroid area in an adult are apparently not followed by an increased incidence of this neoplasm, and the use of radiation therapy for adults when indicated should not have to be restricted. Further studies are needed before definite conclusions can be reached. Until that time, young children, with few or no exceptions, should be protected from all ionizing radiation in the treatment of nonmalignant conditions.

WILLIAM E. NORTH, M.D.

Mesenterial Lipoma Simulating Genital Tumor. Klier, E., Zntrlbl. f. Gynaek. 80:269, 1958.

Mesenteric tumors are subserous formations classified, according to the site of their origin, as mesenteric, retroperitoneal and undetermined. The cystic forms occur three or four times as frequently as do the solid types, which are usually lipomas and only occasionally fibromas, myomas or sarcomas. In most cases these masses are incorrectly diagnosed preoperatively as adnexal or uterine tumors.

The author reports the case of a 54-year-old primipara, in the menopause for one and one-half years, who complained of occasional burning pain in the upper part of the abdomen, abdominal fullness and pressure for the past three months. She had lost 15 pounds (6.8 Kg.) of weight within six months and complained of frequent fatigue. The value for hemoglobin was 61 per cent; the red blood cell count was 3,200,000 per cubic millimeter, and the sedimentation rate was increased.

Physical examination revealed, instead of a corpus uteri, a palpable tumor the size of a man's head, extending upward and to the right. Flat, hard, irregular immobile indurations were palpated to the right of and above the umbilicus. The history and observations led to a diagnosis of malignant adnexal tumor with extensive omental metastases or, alternately, of gastric carcinoma with Krukenberg tumors. A gastrointestinal series, however, gave negative results, making a genital origin of the growth even more likely.

Laparotomy revealed an irregular, hard, smooth tumor of the aforementioned size in the right lower abdominal quadrant. The mass was connected with the mesentery by a finger-thick cord, about 1½ inches (3.7 cm.) in length. After removal of this tumor another one, twice as large, was exposed after the incision had been enlarged upward. It was located between the two mesenteric leaves of the ileum, and its surface showed lipomas up to plum size, some pedicled. The large mass was removed, and a length of small intestine (110 cm.) at the ventral side of the tumor was resected. The patient's recovery was uneventful.

The weight of the two masses was 4.15 and 2 Kg. respectively. Both were partly soft, partly hard, yellowish and edematous. Microscopically they were identified as benign fibrolipomas with central calcification.

Outstanding in this case, as in others, were the scant and misleading symptoms and signs, prompting the erroneous diagnosis of the tumor's derivation from the genital system and of its malignancy.

ERNEST G. ABRAHAM, M.D.

Treatment of Resistant Contracture of the Bladder Neck in Women by Plastic Revision of the Vesical Orifice. Falk, D., J. Urol. 79:447, 1958.

The author discusses that ever-present female problem, the "bladder neck syndrome." These are the women who complain of symptoms of obstruction, infection, frequency, urgency, and nocturia.

Nine patients were operated upon, with revision of the vesical neck by the retropubic approach. None of these women were cured, and the relief was transitory.

In the author's opinion, this syndrome requires more research as to causes, effects, diagnosis and treatment.

SHEPARD JEROME, M.D.

Surgical Aspects of Carcinoma of the Breast. Horwitz, A., M. Annals 27:81, 1958.

The surgical treatment of carcinoma of the breast is based on the classic concept that it begins as a focal disease and later, after an unknown length of time, becomes infiltrative, usually spreading to the regional lymph nodes or by the blood stream to more distant sites. If that assumption is true, the corollary follows that the earlier the primary lesion is discovered and extirpated the greater the probability of cure.

The term "early," however, is indefinite. The exact time of onset of carcinoma of the breast is impossible to determine. The time interval between the *in situ* stage and the infiltrative stage is unknown. Nor is it known definitely how long it takes for local disease to involve the regional nodes or spread to distant sites. There is no standard pattern in the progress of the disease.

The only absolutely "early" case is the "surprise" carcinoma discovered by the pathologist. In order to obtain more of these, a closer scrutiny should be given to those "borderline" cases. When there is persistent thickening or grittiness of the breast, especially in the upper outer quadrant or tail, especially in a patient past 40, a wedge of this tissue should be removed for biopsy. Recurrent cysts appearing after several biopsies should be an indication for the removal of all breast tissue through a submammary incision, without removal of the nipple, for there is growing evidence that women to whom this applies run a greatly increased risk of carcinoma. And what is more distressing is that often the carcinoma in these cases is obscured by the cystic disease or by the previous surgical procedures, so that its discovery is much too late.

Irradiation is excellent for palliation. After radical mastectomy, if there is fairly extensive involvement of the axillary nodes, irradiation may be used. Whether it improves the rate of survival is questionable.

Surgical castration is advised for all women with functioning ovaries if there is any involvement of the axillary nodes. Newman has observed metastases to the ovaries in about 50 per cent of patients with extensive metastases.

Adrenalectomy and hypophysectomy are still in the experimental stage.

Chemotherapy at the time of operation may be found useful in preventing the dissemination of viable malignant cells in the general circulation.

Operation is not the ultimate answer to the problem, but until something more effective is found it offers the patient her best chance of cure. Currently the radical mastectomy, as Halsted said more than 60 years ago, "done properly and in time," is certainly the best hope of the patient with carcinoma of the breast.

WILLIAM E. NORTH, M.D.

To William Worrall Mayo, a physician was a dedicated person who must put the welfare of his patients before his own private gain. He and his sons were there not to accumulate money, but to help people to be healed. His own wanderings, his excursions into tailoring, land surveying and politics, had given him insight into people's minds. . . . They were adequately paid for their services, but the interest of their work seemed to satisfy the larger hunger. Placing personal character above personal possessions was the first lesson which Doctor Mayo taught his sons. In Europe, such unworldly notions might have turned the sons into a pair of dilettantes, but in the bracing mental atmosphere of the north-west, it was possible to switch over the energy which most men applied to dollar-making into the pursuit of professional efficiency.

—*Williams*

THE JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS

Index, Volume 31, January-June, 1959
By Subjects and Authors

INDEX TO ARTICLES

- Abdomen 1, 145, 269, 393, 513
- Abducens
  - paralysis of 593
- Abscess
  - gluteal 161
- Abstracts
  - *January* 136
  - *February* 264
  - *March* 387
  - *April* 500
  - *May* 626
  - *June* 734
- Adenocarcinoma
  - urachal 169
- Adhesions
  - following peritonitis 286
- Anastomosis
  - breakdown of 269
  - of ileum to bladder or urethra 692
- Anatomists
  - British, in surgical history 376
- Anesthesia
  - history of 109, 486, 601
- Antibiotics
  - in preoperative treatment of colon 215
- Antisepsis
  - history of 601
- Arteries
  - renal, infarction of 294
- Asepsis
  - history of 601
- Avulsion
  - traumatic, of psoas muscle 424

- Balance
  - water and electrolyte 579
- Biliary tract
  - surgical treatment of 373
- Bladder, urinary
  - adenocarcinoma of 169
  - ectopia of 674
  - replacement of 692
- Bone
  - fracture of 341
- Book Reviews
  - *January*
    - Atkinson, Donald T.: *Texas Surgeon* 129
    - Albot, Guy, and Poilleux, F.: *Duodenum et Pancreas (Duodenum and Pancreas)* 128
    - Barton, Richard Thomas: *Religious Doctrine and Medical Practice* 134
    - Bishop, W. J.: *Bibliography of International Congresses of Medical Sciences* 135
    - Dow, Robert Stone, and Moruzzi, Giuseppe: *The Physiology and Pathology of the Cerebellum* 130
    - Edmunds, Vincent, and Gordon, C.: *Ideals in Medicine* 135
    - Engel, Leonard: *The Operation* 130
    - Kaufman, R.: *Chirurgie Preventive de la Tuberculose Osteo-Articulaire (Preventive Surgery in Osteoarticular Surgery)* 134
    - Lassek, A. M.: *Human Dissection: Its Drama and Struggle* 130
    - McCall, Milton L., and Bolten, Karl A.: *Martius' Gynecological Operations* 131
    - Parenti, Gian Carlo, and Fabi, Mario: *Chirurgia Geriatrica (Geriatric Surgery)* 130
    - Perret, C. A.: *Diagnostic Clinique Pronostic et Traitement des Tumeurs benignes et malignes (Clinical Diagnosis, Prognosis and*

Treatment of Benign and Malignant Tumors) 130
Roberts, H. J.: *Difficult Diagnosis: A Guide to the Interpretation of Obscure Illness* 133
Schmorl, C. G., and Junghanns, H.: *The Roentgenographic and Clinical Picture of the Healthy and Diseased Spine* 129
Swenson, Oscar: *Pediatric Surgery* 133
Wise, Robert A., and Baker, Harvey W.: *Surgery of the Head and Neck* 134

February

Harrison, T. R., Adams, Raymond D., Bennett, Ivan L. Jr., Resnik, William H., Thorn, George W., and Wintrobe, M. W.: *Principles of Internal Medicine* 263
Patey, Davey H.: *An Introduction to Surgery* 262
Wertheimer, Pierre, Favre-Gilly, J., and Lapras, A.: *Pathologie Vasculaire des Membres (Vascular Pathology of the Extremities)* 261

March

Anson, Barry J., and Maddock, Walter G.: *Callander's Surgical Anatomy* 385
Baldwin, Maitland, and Bailey, Pearce: *Temporal Lobe Epilepsy* .. 384
Bernard, Claude: *An Introduction to the Study of Experimental Medicine* 383
Borrie, John: *The Management of Emergencies in Thoracic Surgery*. 383
Crue, Benjamin L. Jr.: *Medulloblastoma* 383
Davidson, Maurice: *Memoirs of a Golden Age* 384
Dunthy, Englebert, and Botsford, Thomas W.: *Physical Examination of the Surgical Patient*.......... 381
Hollender, Marc H.: *The Psychology of Medical Practice*............. 382
Jackman, Raymond J.: *Lesions of the Lower Bowel* 382
Keys, Thomas E.: *Applied Medical Library Practice* 386
Speert, Harold: *Obstetric and Gynecologic Surgery* 383
Stephenson, Hugh E.: *Cardiac Arrest and Resuscitation* 385
Strean, Lyon P.: *The Birth of Normal Babies* 385
Widell, S.: *On the Cerebrospinal Fluid in Normal Children and in Patients with Acute Abacterial Meningo-Ensephalitis* 381
Oleck, Howard L.: *Nonprofit Corporations and Associations*....... 382

April

Alexander, Edythe Louise: *The Care of the Patient in Surgery, Including Techniques* 499
Dencker, S. J.: *A Follow-Up Study of 128 Closed Head Injuries in Twins, Using Co-Twins as Controls*...... 498
Guilleminet, M., and Ricard, R.: *Pseudarthrose Congenitale du Tibia et son Traitement (Congential Pseudarthrosis of the Tibia and Its Treatment)* 498
Marshall, Mary Louise: *The Physician's Own Library*............. 499
Martin, Gustav J.: *Clinical Enzymology* 497
Tonnis, W.: *Chirurgische Behandlung der Frischen Schadelhirnverletzungen (Surgical Management of Recent Craniocerebral Injuries)* 497
White, Matthew, and Dennison, Wallace M.: *Surgery in Infancy and Childhood* 497
Wolstenholme, G. E. W., and O'Connor, Cecilia M.: *Amino Acids and Peptides with Antimetabolic Activity* 499

May

Bailey, Hamilton, and Love, McNeill: *A Short Practice of Surgery*...... 616
Barsky, Arthur Joseph: *Congenital Anomalies of the Hand and Their Surgical Treatment* 617
Buchner, Franz: *Personality and Nature in Modern Medicine*........ 618
De Palma, Anthony: *The Management of Fractures and Dislocations* 617
De Takats, Geza: *Vascular Surgery*. 618
Hetherington, H. W., and Eshleman, Fannie W.: *Tuberculosis: Prevention and Control*............... 618
Hurwitz, Alfred, and Degenshein, George A.: *Milestones in Modern Surgery* 619
John Jacob Abel, M.D. The Williams and Wilkins Company, Baltimore, 1957 617
Third Biennial Conference on Charitable Foundations, New York University Press, 1957............ 619
Uitgeverij, J. C. Ton: *Reflux Oesophagitis* 619

June
  Brown, James Barrett, and McDowell, Frank: *Skin Grafting* 732
  Conn, Howard F.: *Current Therapy, 1959* 731
  De Savitsch, Eugene: *Homosexuality, Transvestism and Change of Sex* 729
  Diamant-Berger, Lucien: *Ptoses Abdominales et Prolapsus Pelviens: Clinique et Therapeutique Chirurgicales (Abdominal Ptosis and Pelvic Prolapse)* 730
  Dornette, William H. H., and Brechner, Verne L.: *Instrumentation in Anesthesiology* 730
  Gervis, W. H.: *Orthopaedics in General Practice* 728
  Jordon, Henry H.: *Hemophilic Arteriopathies* 729
  Kremer, K.: *Chirurgie der Arterien (Surgery of the Arteries)* 728
  Le Beau, Jacques: *L'Hypophysectomie dans le traitement du Cancer (Hypophysectomy in the Treatment of Carcinoma)* 733
  Marti-Ibañez, Felix: *Centaur: Essays on the History of Medical Ideas* 727
  Michel-Bechet, R.: *Atlas of Surgical Techniques in Major Surgical Procedures: Neck, Thorax, Abdomen and Pelvic Surgery* 731
  Rowntree, Leonard G.: *Amid Masters of Twentieth Century Medicine* 728
  Schifferes, Justus J.: *The Family Medical Encyclopaedia* 728
  Wakeley, Cecil: *Groves' Synopsis of Surgery* 731
  Wolstenholme, G. E. W., and O'Connon, C. M.: *Neurological Basis of Behavior* 732
Blood
  loss of 448, 601
Breakdown
  ischemic anastomotic 269
Breast
  bilateral resection of 329

Calculi
  in ureter 701
Canalization
  in cholecystectomy 369
Carcinoma
  of bladder 305
  of breast 329
  of gallbladder 369
  of head and neck 201
  of lung 64
  of prostate 305
  of rectum 92
  of stomach 269
  of thyroid 78
  of urachus 169
  of uterine corpus 570
  supervoltage irradiation for 657
Cardiopericardiomyopexy
  for de Quervain's disease 301
Cardiovascular Surgery
  January 8
  February 165
  March 294
Cataract
  bilateral extraction of 459
Cavity
  endometrial, lavage of 570
Children
  repair of cleft lip in 705
Cholangiography
  transcutaneous hepatic 145
Cholecystectomy 369
Choledochoscopy
  intra-operative 644
Coaptor
  in osteosynthesis of tibia 710
Cobalt bomb
  in supervoltage irradiation 657
Colic
  renal 424
Colon
  surgical preparation of 215
Complications
  of obstetric surgery 448
  of partial gastrectomy 529
Compression
  duodenal 281
Constipation
  puerperal, treated with senna preparation 455
Cyst
  hydatid, of liver and bile ducts 475

Deafness
  otosclerotic, of middle ear 464
Deformity
  of lip, repair of 705
Detection
  cytologic, of carcinoma 181
Deutsche Abteilung
  January 80
Diagnosis
  cholangiographic 145
  choledochoscopic 644
  cytologic 181
  nephrographic 354
  physical, history of 717

  tomographic 513
  urethrographic 683
Disease
  abdominal...........1, 145, 269, 393, 513
  biliary 373
  cardiac 8
  cardiovascular 8, 165, 294
  cerebral 315
  De Quervain's 192
  dyskinetic 479
  genitourinary 169, 305, 424, 674
  fatal 414
  gynecologic 24, 174, 270, 329, 443
  glandular 78, 329
  hepatic 475
  infectious 64, 98
  infestive 475
  inflammatory 1, 30
  ischemic 269
  neural 47, 323
  ophthalmic 335, 459, 593
  otic 464
  pulmonary 64, 98
  rectal 92
  recurrent 8
  Roger's 301
Ducts
  biliary 65
  intubation of 631
Duplication of ureter................. 701
Dyskinesia
  treated by pallidotomy.............. 479

Ear
  middle, otosclerotic deafness of....... 464
Ectopia
  of bladder 674
Editorials
  January
    Letheon: The Cadenced Story of
      Anesthesia 109
  February
    Early French Surgeons............ 225
  March
    British Surgeons and Anatomists... 376
  April
    The History of Anesthesia:
      The Early Days.................. 486
  May
    Reflections on the Conquest of Pain,
      Infection and Hemorrhage....... 601
  June
    Observations on the History of
      Physical Diagnosis: Hippocrates,
      Auenbrugger, Laennec 717
Elephantiasis 273
Endometrium
  lavage of cavity.................... 570
Evaluation
  of nephropexy 429
  of plication technic................ 286
  of tomography 513
Excision
  of bladder 692
  of breast 329
  of elephantoid tissues.............. 273
  of gallbladder 369
  of prostate 305
  of stomach 269, 648
  of uterus 570
  secondary, of war wounds............ 665
Extraction
  of cataract 455
Eye
  bilateral cataract extraction.......... 455
  mass surgical treatment of........... 335

Factors
  psychic, in carcinoma of head and neck 201
Femur
  fractures of 665
Flat foot 58
Fracture
  Colles' 341
  combat 665
  of femur 665
  of tibia 710

Gallbladder
  resection of 369
Gangrene
  of gastric remnant.................. 269
Gastrectomy
  partial, complications of............ 529
  subtotal elective 648
General Surgery
  January 1
  February 145
  March 269
  April 393
  May 513
  June 631
Genitourinary Surgery
  February 169
  March 305
  April 424
  May 541
  June 674
Gland
  mammary 329
  thyroid 78

Granuloma
  eosinophilic, of stomach............ 281

Head and neck
  carcinoma of 201
Heart
  disease of 8
Hematoma
  massive, of broad ligament.......... 188
Hemorrhage
  control of 601
  extraperitoneal and vulval.......... 448
  fatal, from duodenal varix.......... 414
Hernia
  congenital diaphragmatic 401
  crural 104
Herniorraphy
  Bassini-Rienhoff, modification of...... 393
Hypertrophy
  benign prostatic 683

Impingement
  myofascial, upon nerves 443
Indications
  for drainage in cholecystectomy...... 369
Infarction
  of renal artery.................... 294
Infection
  control of 601
  in war wounds 215, 665
  tuberculous 64, 98
Infestation
  hydatid 475
Inflammation
  of pancreas 1
  of uterus 30
  products of 30
Inhibitors
  carbonic anhydrase 575
Injury
  of spinal cord..................... 323
  war 665
Intestine
  obstruction of 401
  occlusion of 104

Keloid
  fundal 30
Kidney
  surgical treatment of...........354, 429

Laminectomy
  for spinal trauma.................. 323
Lavage
  of endometrial cavity............... 570
Ligament
  broad, hematoma of................. 188
Lip
  cleft, repair of 705
Literature, German surgical
  survey of 500, 620
Liver
  hydatid cyst of.................... 475
Lung
  carcinoma of 64
  tuberculosis of 64, 98

Mastectomy
  bilateral, for carcinoma............ 329
Medicine
  atomic, for vesical and prostatic
    carcinoma 305
Metabolism
  water and electrolyte, in pregnancy... 579
Micoren
  experience with new drug............ 87
Muscle
  psoas, traumatic avulsions of 424
  excision of, in war wounds........... 665

Nephropexy 354, 429
Nerve
  iliohypogastric and ilioinguinal,
    in women 443
Neurologic Surgery
  January 48
  March 315
  April 437

Obstetric and Gynecologic Surgery
  January 24
  February 174
  March 329
  April 443
  May 570
Obstetrics
  complicated by hemorrhage.......... 488
Obstruction
  of intestine 401
  of stomach 281
  of urinary tract................... 551
Occlusion
  of intestine 104
Operation
  Bassini-Rienhoff, modified 393
  Taranto, for genital prolapse......... 38
Ophthalmologic Surgery
  March 335
  April 459
  May 593
Orthopedic Surgery
  January 58

  - *February* 192
  - *March* 341
- Osteosynthesis
  - tibial, with coaptor 710
- Otorhinolaryngologic Surgery
  - *February* 201
  - *April* 464
- Otosclerosis
  - causing deafness 464
- Ovarian disjunctum 24

- Pain
  - control of 601
- Pakistan
  - mass ophthalmic surgery in 335
- Pallidotomy 479
- Palsy
  - complicated cerebral 315
- Pancreatitis
  - acute 1
- Paralysis
  - of abducens 593
- Peri-Colace
  - routine surgical use of 420
- Peritonitis
  - treated with plication 286
- Phenylbutazone
  - for thrombophlebitis 165
- Philtrum
  - reconstruction of 705
- Plastic and Reconstructive Surgery
  - *June* 705
- Plication
  - evaluation of 286
- Posture
  - poor, due to undiagnosed poliomyelitis. 460
- Pregnancy
  - toxemia of 579
- Proctologic Surgery
  - *February* 215
- Prolapse
  - genital 38
- Prostate
  - benign hypertrophy of 683
  - carcinoma of 305

- Rectum
  - carcinoma of 92
- Remnant
  - gastric, gangrene of 269
- Repair
  - of cleft lip 705
  - of flexor tendons 347
- Replacement
  - complete, of urinary bladder 692

- Sclerosis
  - of middle ear 464
- Seccion en Espanol
  - *January* 104
  - *March* 354
  - *April* 479
- Section
  - cesarean 188
- Section en Français
  - *March* 347
  - *April* 475
  - *June* 710
- Senna
  - in puerperal constipation 455
- Sezione in Italiano
  - *January* 87
- Sound
  - Cattell's, in biliary surgery 373
- Spinal cord
  - injuries of 323
- Spine
  - cervical, disease of 47
- Staining technics
  - variation in 30
- Stenosis
  - recurrent mitral 8
- Stricture
  - urethral 541
- Stomach
  - carcinoma of 269
  - obstruction of 281
- Surgery of the Thyroid and Parathyroids
  - *January* 78
- Syndrome
  - postcholecystectomy 80

- Tendon
  - flexor, repair of 347
  - transplant 593
- Therapy, delayed
  - of intestinal obstruction 407
  - of war wounds 665
- Tibia
  - osteosynthesis of 710
- Thoracic Surgery
  - *January* 64
- Thrombophlebitis
  - of superficial and deep veins 165
- Thyroid
  - carcinoma of 78
- Tomography
  - polydirectional 513
- Transplant
  - tendon, for abducens paralysis 593
- Tube
  - indwelling, in common duct 631

Tuberculosis
  and pulmonary carcinoma............ 98
  pulmonary 64, 98

Ulcer
  peptic, treatment of.............215, 648
Ureter 701
Urethra
  anastomosis of 692
  stricture of 541
Urine
  obstructed flow of................. 551
Uterus
  carcinoma of 570
  inflammation of 30

Varix
  fatal duodenal 414
Valve
  inadequate mobilization of.......... 8

INDEX TO AUTHORS

Afonso, José Filipe.................. 579
Anspach, Paul *414*
Appleby, Lyon H...................... 631

Bailey, Charles P.................... 8
Baldrati, Francis 154
Barnes, Roger W...................... 429
Bassot, J. 347
Bisch, M. 513
Blankoff, B.......................... 98
Bonjean, P. 513
Borisauti, Virul Kao................. 401
Broussin, M. 513
Brown, Albert F...................... 414
Brown, James O....................... 443
Brush, Charles 192

Cantor, Meyer O...................... 281
Casebolt, Buford T. 269
Cattaneo, Angelo Domenico............ 87
Cereseto, Pedro L.................... 475
Chang, Norman 570
Comarr, A. Estin 437
Conley, John J....................... 201
Cross, Roland R...................... 683

De Alvarez, Russell R................ 579
De la Pena, Alfonso.................. 294
Deutsch, Irvin 47
Duchene, Albert 710

Emine, M. S.......................... 407

Fonseca, Francisco 369

Geiling, Eugene M. K................. 601
Gervis, W. H......................... 58
Gherardi, Carl A..................... 154
Goldfarb, Morton 692
Goldstein, Albert E. 692
Goldstein, Robert B.................. 692
Golub, Leib J........................ 443
Gorelik, Aaron N..................... 301
Grant, J. C.......................... 529
Grant, Philip 448
Griessmann, Heinz 644
Gupta, Vishwanath *665*
Guttman, A. P........................ 341

Halligan, Earl J..................... 145
Holtz, Raymond S..................... 188
Horsley, Thomas A.................... 429
Hwang, Paul 414

Iselin, Marc 347

Jaffe, Henry L.......................305
Jarcho, Saul 717
Jorgenson, Eugene J.................. 414

Kaiser, E. 80
Kasdon, S. C......................... 455
Kopel, I. 393
Korman, William 448

Lamphier, Timothy A.............192, 420
Landeau, Stanley J................... 215
Leake, Chauncey D.................... 109
Leis, Henry Patrick 329
Lempert, Julius 464
Lepore, Alfredo 648
Lloyd, Frederick A. 683
Lyman, Frank 420

Magaldi, Pascual 161
Markowski, B. 393
Martin, M. 513
Mathe, Charles P..................... 424
McCabe, John A....................... 648
McGregor, Mar W. 705
Melicow, Meyer B..................... 294
Mobarharn, H. 64
Montanez, Octavio 104
Moore, Jerry G....................... 570
Morentin, B. O....................... 455
Morse, Dryden P...................... 8
Morton, Daniel G..................... 570
Mulla, Nejdat 174
Muntarbhorn, Smarn 401

Nathans, Henry 701
Noble, Thomas B. 30, 286

O'Connor, G. B. 705
Orbach, Egmont J. 165
Ostroger, Joseph 192

Pareda, Francisco Puente 373
Pepi, John F. 192
Pritikin, John I. 335
Puigvert, A. 354

Radman, H. Melvin 448
Rahim, Farid 145
Raju, T. Kanaka 273
Rayos, Blas O. 169
Ritter, Henry Jr. 551
Ritter, J. Sidney 551
Rolnick, Donald 683
Rosner, Samuel 315
Rusche, Carl F. 305

Sachs, Henry B. 24
Sadove, Max S. 486
Schillinger, Robert J. 593
Scillieri, John 459
Schwartz, Lester 486
Shultz, W. G. 674
Sidoti, Joseph S. 701
Simic, Sava 92
Solomon, Cyril 169
Stein, Justin J. 657
Stevenson, Lloyd G. 376
Strauss, Reuben 181
Surraco, Luis A. 541
Swain, Claude R. 78
Swersie, Allan K. 169

Tallmadge, G. Kasten 225
Turell, Robert 215

Uson, Aurelio 294

Valiente, Vincent J. 701
Velasco-Suarez, Manuel M. 479
Viaggio, Juan A. 38

Walder, Samuel 1
Wangermez, Charles 513
Wangermez, J. 513

Yildiran, Cafir 692

There is still room for improvement, particularly in the technique of those operations which are not considered to be major surgery. Haemorrhoids are still torn rather than dissected out; the average operation for hernia is still coarse. traumatic. and unphysiological; and even the gentle surgeon is often content to apply his principles to the deeper layers only, forgetting the physiology of the skin and subcutaneous tissues. Yet the day is clearly not far distant when all operations will be done with the unhurried exactness of the surgeon-neurologist, when all scars will be the invisible line of the plastic surgeon. For the beautiful scar is more than a work of art. Wherever placed it is proof of healing. not merely without sepsis but without any recognizable reaction to repair: it is a guarantee of lasting comfort for the patient and of untainted soil for the man who may have to come afterwards. It is the signature of the gentle surgeon.

—*Ogilvie*

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
Collège international de chirurgiens
6-8 rue de la Confédération
Genéve (Suisse)

Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

The following pages comprise

Section II

the BULLETIN

of the

Journal

of the

International College of Surgeons

Schedule of Meetings

INTERNATIONAL COLLEGE OF SURGEONS

1959

June 19-21 **Lyons, France**	**French Section** **International College of Surgeons**
July 15-16 **Managua, Nicaragua**	**Nicaragua Section** **International College of Surgeons**
July 25-26 **Amsterdam, Netherlands**	**The Netherlands Section** **International College of Surgeons**
August 8-9 **Helsinki, Finland**	**Finland Section** **International College of Surgeons**
August 19-20 **Vienna, Austria**	**Austrian Section** **International College of Surgeons**
August 22-23 **Munich, Germany**	**German Section** **International College of Surgeons**
August 25 **Paris, France**	**French Section** **International College of Surgeons**
September **Santos, Brazil**	**Brazilian Section** **International College of Surgeons**
September 28-29 **Chattanooga** **Tennessee**	**Tennessee State Chapter** U. S. Section, **International College of Surgeons**
September 30-October 4 **Guayaquil, Ecuador**	**Ecuador Section** **International College of Surgeons**
October 30 **Hong Kong, China**	**China—Hong Kong Section** **International College of Surgeons**
November 2 **Tokyo, Japan**	**Japan Section** **International College of Surgeons**
November 2 **Bangkok, Thailand**	**Thailand Section** **International College of Surgeons**
November 16-18 **Hot Springs, Virginia**	**Mid-Atlantic Sectional Meeting** U. S. Section, **International College of Surgeons**
December **Taipei, Taiwan (Formosa)**	**China—Formosa Section** **International College of Surgeons**
December **Jaipur (Rajasthan) India**	**India Section** **International College of Surgeons**

(Continued on next page)

Schedule of Meetings

(Continued from preceding page)

INTERNATIONAL COLLEGE OF SURGEONS

1959

MIDSUMMER POSTGRADUATE EUROPEAN TOUR

July 17 - August 27, 1959
Dr. Ross T. McIntire, Coordinator

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation
(Canada, Mexico, U. S., Central American and Caribbean Sections)
International College of Surgeons
SEPTEMBER 13-17 CHICAGO, ILLINOIS

AROUND-THE-WORLD POSTGRADUATE CLINIC TOUR

October 10 - November 28
Dr. Edward L. Compere, Coordinator

1960

TWELFTH BIENNIAL INTERNATIONAL CONGRESS

International College of Surgeons
Prof. Dr. Pietro Valdoni, Rome, Congress President
MAY 15-18 ROME, ITALY

DR. ALEXANDER BRUNSCHWIG
F.A.C.S., F.I.C.S. (Hon.), D.A.B.
New York, New York

GENERAL CHAIRMAN
Twenty-Fourth Annual Congress
North American Federation
International College of Surgeons

Twenty-Fourth Annual Congress
North American Federation
International College of Surgeons

Comprising

THE UNITED STATES OF AMERICA, CANADA, THE UNITED STATES OF MEXICO, CUBA, HAITI, GUATEMALA, HONDURAS, EL SALVADOR, NICARAGUA, COSTA RICA AND PANAMA

September 13-17, 1959

Palmer House
Chicago, Illinois

We anticipate a splendid scientific program at the Twenty-Fourth Annual Congress of the North American Federation of the International College of Surgeons, to be held September 13-17, 1959, at the Palmer House in Chicago.

Our best guarantee of the excellence of the program lies in the caliber of the men who are organizing it.

The General Chairman

The general chairman of the Congress is **Dr. Alexander Brunschwig, F.A.C.S., F.I.C.S. (Hon.), D.A.B.**, of New York.

Dr. Brunschwig is clinical professor of surgery at Cornell University and chief of the gynecologic service at the Memorial Center for Cancer and Allied Diseases. He is one of America's outstanding surgeons, known throughout the world for his skill and his thoroughness. His whole life is devoted to the surgical treatment of cancer and research into the cause, or causes, of the disease. For his achievements in this field he has won the considered respect of his peers and has the immeasurable satisfaction of knowing he has saved and prolonged lives against great odds.

Dr. Brunschwig is an excellent teacher, exacting but generous and helpful. He is conspicuously successful in training and inspiring younger men both in surgery and in research. He is sensitive to the human potential and eager to give it encouragement and opportunity to develop.

Dr. Brunschwig is vice-president of the International College of Surgeons and a member of its International Board of Governors, as well as vice-president of the United States Section.

Dr. Peter A. Rosi
F.A.C.S., F.I.C.S.
Chicago, Illinois
Chairman
General Program Committee

General Program Committee

The chairman of the committee of distinguished surgeons who is organizing the general program of the Congress is **Dr. Peter Rosi,** F.A.C.S., F.I.C.S., of Chicago. Dr. Rosi is associate professor of surgery at Northwestern University Medical School; professor of surgery at Cook County Graduate School, and an attending surgeon on the staff of the Chicago Wesley Memorial Hospital. Dr. Rosi has served the College previously as chairman of the program committee and has earned the gratitude of officers and members alike for the generous contribution of his time and effort, as well as admiration for his extraordinary organizing ability.

Members of the committee associated with Dr. Rosi include:

Dr. Charles S. White, F.A.C.S., F.I.C.S., an outstanding surgeon of Washington, D.C., who is chief of Doctors Hospital; consultant in surgery to Central Dispensary and Emergency, George Washington University and Garfield Memorial Hospitals and to Columbia Hospital for Women;

Dr. John B. O'Donoghue, F.A.C.S., F.I.C.S., of Chicago, who is clinical professor of surgery at the Stritch School of Medicine of Loyola University; professor of surgery at Cook County Graduate School of Medicine, and attending surgeon at Cook County, Mercy and St. Elizabeth Hospitals;

Dr. William G. Stephenson, F.A.C.S., F.I.C.S., of Chattanooga, Tennessee, regent of the State of Tennessee for the United States Section of the International College of Surgeons, who is the founder of the annual Tennessee Valley Medical Assembly and a leader in organizing its scientific programs;

Dr. Arnold S. Jackson, F.A.C.S., F.I.C.S. (Hon.), of Madison, Wisconsin, former president of the United States Section of the International College of Surgeons and former president of the American Goiter Association, who was conspicuously successful as coordinator of the 1958 International College of Surgeons Around-the-World Postgraduate Clinic Tour;

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F.I.C.S., of South Miami, Florida, who as chairman of the Southeastern Regional Meeting at the Americana Hotel in Miami Beach in January of this year scored a signal success as an organizer of a remarkable regional scientific meeting, and Dr. E. N. C. McAmmond, Vancouver, British Columbia, the highly able and popular secretary of the Canadian Section of the International College of Surgeons.

With cooperation and frequent consultations this committee of capable surgeons is bound to produce an outstanding program in general surgery.

The Specialties

Much of the value and fascination of a Congress of the International College of Surgeons lies in the number and variety of excellent programs arranged for the surgical specialties.

No one is more aware than is the surgeon of the fact that a patient is not an isolated case of this or that but a whole human being and that to treat him successfully by means of surgery also entails consideration of many facets of his physical and psychological personality. Indeed, frequently the modern surgeon finds that treatment that is solely surgical may yet involve complicating aspects, to deal with which highly technical knowledge that is outside his own field is necessary. Surgery is no longer one science and one art. It is a complex of highly specialized disciplines, each taxing, at that, the capacity of the human mind to encompass its ramifications.

In addition, therefore, to maintaining a division of general surgery, a surgical society to do justice to the growth of surgical knowledge has to break itself down to surgical specialties.

The International College of Surgeons is particularly proud of the strength of its surgical specialty divisions, each of which plans and organizes its own comprehensive program.

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International College of Surgeons

FOUNDED BY DR. MAX THOREK
(GENEVA, SWITZERLAND, 1935 - WASHINGTON, D. C., 1940)

A World Federation of General Surgeons & Surgical Specialists, Inc.
"Instrument of the Free World"

OFFICE OF THE
INTERNATIONAL SECRETARY GENERAL
850 WEST IRVING PARK ROAD
CHICAGO 13, ILLINOIS

Dear Doctor:

We are preparing a Directory of the membership of the International College of Surgeons in the United States and the rest of the world. This will include also the Constitution and Bylaws of the College, information on qualifications for membership, a description of the activities of the College, as well as a full list of members, alphabetically and regionally arranged, with pertinent information about each member.

The publication of this Directory will entail an expense to the College of between 25 and 30 thousand dollars. The material is now being prepared for the printers, and we are soliciting your subscription for a copy of this handy and informative volume.

The pre-publication price for a copy of this important book is $5.50 — after publication $7.50.

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Yours sincerely,

PUBLICATIONS COMMITTEE
INTERNATIONAL COLLEGE OF SURGEONS

Dr Max Thorek

Dr. Max Thorek, Editor

Directory Department
International College of Surgeons
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CHICAGO 10, ILLINOIS
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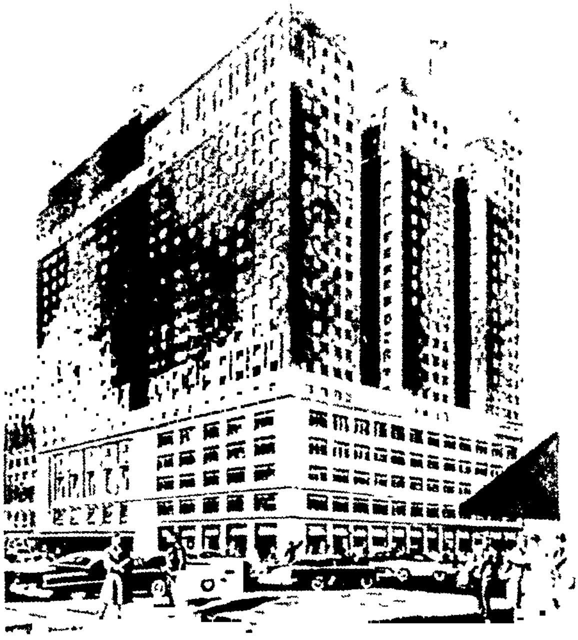
NORTH AMERICAN FEDERATION
(Canada, Mexico, U. S. and Central American Sections)
INTERNATIONAL COLLEGE OF SURGEONS



PALMER HOUSE—CHICAGO
Congress Headquarters

September 13-17, inc., 1959

For information regarding preliminary program and reservations, etc. address:

Secretariat
International College of Surgeons
1516 Lake Shore Drive
Chicago 10, Illinois

APPLICATION FOR HOTEL RESERVATIONS

TWENTY-FOURTH ANNUAL CONGRESS

North American Federation
(Canada, Mexico, U. S. and Central American Sections)
INTERNATIONAL COLLEGE OF SURGEONS

PALMER HOUSE — CHICAGO

Congress Headquarters

September 13, 14, 15, 16, 17, 1959

Note: The headquarters hotel is reserving a sufficiently large block of rooms for those who will be attending the Congress. However, early reservations are necessary to hold this block of rooms.

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$8.00 and up	$15.00-$22.50	$16.00-$24.50	$40.00 and up (1 person)

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Single Room	Double Rooms	Twin Rooms	Parlor and 1 Bedroom
$ to $	$ to $	$ to $	$ to $

Arriving a.m. or p.m. Departing a.m. or p.m.

Please include the names of all persons who will occupy rooms requested

Confirm reservation to:

Ramstedt's Operation

Conrad Ramstedt
b. 1867

HAMILTON BAILEY
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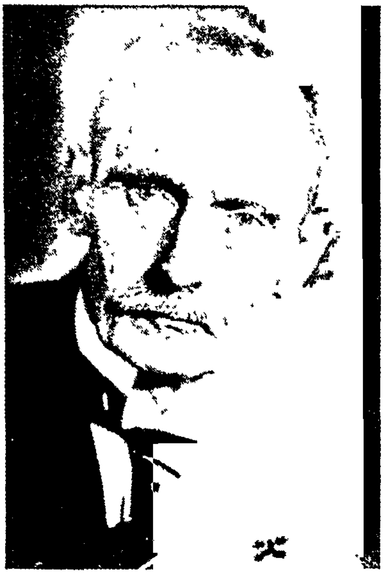

Prof. Conrad Ramstedt, M.D.
b. 1867

As a result of post-mortem examinations on two infants who had died of the disease, hypertrophic pyloric stenosis of infants was first described by Harald Hirschsprung* in 1888. Hirschsprung's paper aroused world-wide interest, but in spite of the high mortality of the condition physicians were reluctant, if not vehemently opposed, to advise operation for its relief. From 1892 to 1912 reports of attempts to relieve the obstruction by various forms of pyloroplasty appeared from time to time; nearly all ended fatally. One notable exception was a patient operated upon by Löbker, who employed gastrojejunostomy. In 1907 Fredet suggested a new operation in which the serous muscular coats of the pylorus alone were severed. Fredet's operation and that of Weber (1908) paved the way for Ramstedt's operation, which was described in 1912.

Ramstedt's two successful cases were reported at a Medical Congress held in Münster in 1912, and were published in the *Medizinische Klinik* of October 20, 1912. The report of the first case reads as follows:

> When in September 1911 . . . I was first confronted with an operation for pyloric stenosis, I decided to perform the partial pyloroplasty according to Weber. During the operation I noticed, after section of the firmly contracted, almost bloodless and hypertrophied muscular ring, that the wound edges gaped markedly; I had the impression that the stenosis was already overcome. Nevertheless I sutured the incision transversely in order to complete the Weber pyloroplasty. The tension of the wound edges was, however, very great and the sutures cut through so that the union of the wound edges in the opposite direction was incomplete. I therefore covered the sutured area with a tag of omentum for protection.
>
> The child is cured. To-day, about one year after the operation, he is developed as well as any child of his age.

In the second case Ramstedt decided to leave the incision gaping; it was a complete success. The second infant operated on by Ramstedt was the son of a physician, and it is remarkable that nearly all the patients on whom Ramstedt operated for this condition early in his large series were the children of medic

---

*Harald Hirschsprung, 1830-1916. Physician, Queen Louise Children's Hospital, Copenhagen.

Since the introduction of the Ramstedt procedure the operative mortality has fallen from 50 per cent to little more than one per cent.

Conrad Ramstedt, the son of a physician, was born at Hamersleben, a village in Central Prussia. He attended the gymnasium at Magdeburg and studied medicine at Heidelberg, Berlin and Halle, graduating M.D. Halle in 1894. From 1895 to 1901 he was an assistant in the surgical clinic at Halle, and he then became a military surgeon. He held high rank in the medical department of the German army during the First World War, and after his discharge in 1919 became chief surgeon to the Rafaelklinik at Münster. Apart from five articles on the surgical treatment of hypertrophic pyloric stenosis, his main contributions to medical literature are the chapters on the surgery of the male genito-urinary organs which he wrote for the *Handbuch der praktischen Chirurgie* edited by Bergmann, Bruns and Mikulicz (1927).

With regard to the eponym Ramstedt's operation, it should be noted that the name is spelled "Rammstedt"* in the original report.

Professor Ramstedt, now 93 years of age, is in excellent health. He is a connoisseur of art, and has made a special study of the Dutch Masters. His younger daughter is a well-known sculptress—Tita Tork-Ramstedt, while Professor Ramstedt's wife by his second marriage is a Directress of a Chemical-Pharmaceutical factory in Westphalia.

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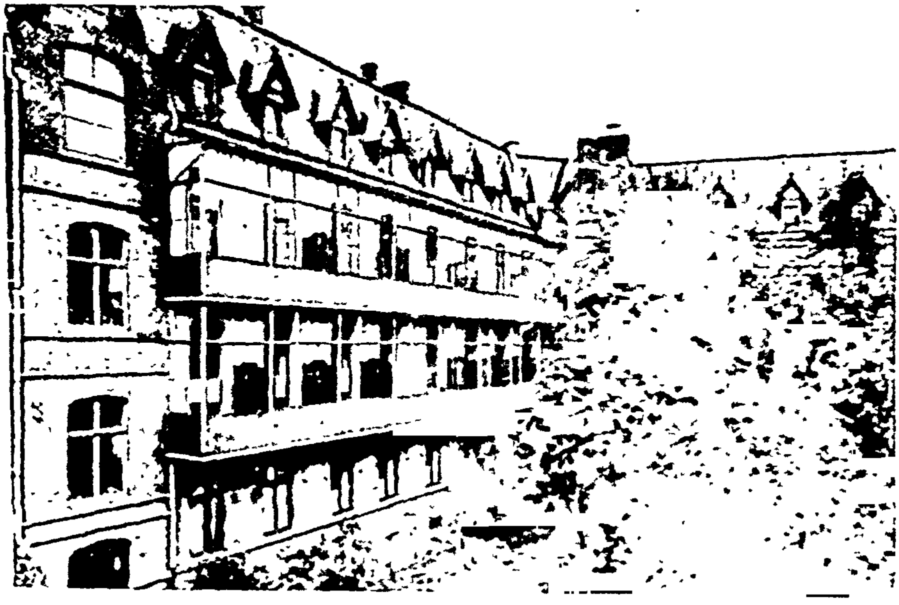
*Professor Ramstedt changed his name from Rammstedt to Ramstedt 35 years ago, and this accounts for the two versions. In some textbooks on surgery it is spelled with one "m"; in most, two "m"'s. One "m" is correct.

Thanks are due to Messrs. H. K. Lewis and Co. Ltd. of London, for permission to reproduce this biography from the forthcoming 3rd edition of Bailey and Bishop's Notable Names in Medicine and Surgery, *and to Professor Conrad Ramstedt for supplying the details of his career.*



The Rafael Clinic, Münster, in the time when Conrad Ramstedt was Surgeon-in-Chief. This building was destroyed by bombing during World War II

Comments by the Founder

A LESSON FOR OUR DAY

Dr. Max Thorek

Exactly one hundred years ago, on June 24, 1859, in a village in northern Italy, a battle was fought between the Franco-Sardinian army and the Austrian forces. While in the roster of the world's politically decisive battles this one is not overweeningly conspicuous, it is doubtful whether in all history there was a battle the results of which were more revolutionary.

It was the battle of Solferino.

Present in a nonofficial capacity was Jean Henri Dunant, a Swiss banker, then in his early thirties, who during the Crimean War had been profoundly moved by Florence Nightingale's efforts to mitigate the sufferings of the wounded.

From his observation post, Dunant was able to watch the engagement. Three hundred thousand men took part. They acquitted themselves with valor. The generals commanded and countercommanded according to the science of warfare and the demands of the situation. The long midsummer day waned. The armies withdrew. (Eventually Napoleon III, Emperor of France, and Franz-Joseph, Emperor of Austria, met, shook hands, and history turned another page.) But on the battlefield lay forty thousand dead and wounded. It took three days and three nights to bury the dead. As the hours, days, and weeks passed, the number of the dead increased, for the wounded were dying in spite of the efforts of the good folk of Castiglione, the town on the outskirts of which Solferino is located, to care for them. Organized by Dunant, the citizens, especially the women, made no distinction between nationalities. *"Tutti fratelli,"* they said. recognizing the immemorial brotherhood of suffering.

But if there was a brotherhood of the suffering and an even more permanent *brotherhood of the dying and the dead,* argued Dunant to himself, could not there be a similar recognition of the brotherhood of those who sought to mitigate those horrors? Could not the surgeons, the nurses, the stretcher-bearers, the volunteer workers, be declared universally and once and for all, together with their charges, non-belligerent, neutral and inviolable?

Meanwhile for a week he labored to find shelter for the wounded, to secure food and surgical supplies, to train the willing but inexperienced volunteers, to do what he could, grateful to the warm-hearted Italians who shared his pity and his work, but inwardly cursing the lack of preparedness, the inadequacy of the medical services, the downright callousness of kings and emperors, prime ministers and generals, and their disregard for the victims of their high politics and brave military adventures.

When he returned to Geneva, his home, he enlisted the cooperation of friends, who sent funds and supplies to Castiglione. The horror of the situation there abated.

But for Dunant that was not enough. He wrote his memorable book *Un Souvenir de Solferino* and he electrified the world. Men and women in all stations of life joined his crusade. He traveled over Europe, soliciting the support of kings and courtiers, statesmen and diplomats. The writers of the world took up his message and repeated it in all languages. Doctors, surgeons, men of science, applauded. Even generals and politicians could no longer ignore the issue. As King John of Saxony remarked:

"A nation which did not join this humanitarian cause would be banned by public opinion in Europe."

In 1863, at Geneva, Switzerland, the International Red Cross was organized. Its growth, the ramification of its services, its ever-increasing activity, are a matter of record and sure evidence in this divided, even splintered, world of the possibilities of international cooperation.

Proud as Dunant was of the Red Cross of his own day, and proud as he doubtless would now be of its magnificent achievements, he was not then and he would not now be content to let himself or the world rest on laurels, no matter how well merited. For Dunant looked far ahead and he foresaw the possibilities of international effort to raise the standard of health throughout the world, to rehabilitate the handicapped, to further cooperation in medical and surgical research and to enlarge the field of science in the service of mankind.

"It was the cause," he wrote, "of suffering humanity that I pleaded everywhere."

It is most fitting that we of the International College of Surgeons should remember Solferino. Many of us too have seen battlefields, battlefields compared to which Solferino was a miniature toy. We have seen horrors unimagined by Dunant. But like him we look forward and unremittingly work for the only way through which in our own day essential progress can be made—through international cooperation. Our great brotherhood of surgeons of the world is an army of strength in the war against war and the horrors of war, against death and disease, and against that half-life of the handicapped who are in the world but not of it.

The struggle of the International College of Surgeons to achieve its aims has, like the struggle of Dunant, not been an easy one. Realization always lags behind the dream. But the horizon of the potential always beckons on. We remember Florence Nightingale and Jean Henri Dunant and the great procession of humanitarians—with the world's surgeons prominent among them—and our hopes are high.

Max Thorek

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The Editorial Office of the Journal of the International College of Surgeons will appreciate receiving the names of our members who wish to aid in abstracting the foreign literature. Those who are interested, kindly communicate with Dr. Max Thorek, Editor-in-Chief, Journal of the International College of Surgeons, 850 West Irving Park Road, c/o The American Hospital of Chicago, Chicago 13, Illinois, U.S.A.

Midsummer European Postgraduate Tour

The Netherlands, Denmark, Norway, Sweden, Finland, Russia, Austria, Germany and France

July 17 - August 27

ROSS T. McINTIRE, M.D., F.A.C.S. (Hon.) F.I.C.S. (Hon.)
TOUR COORDINATOR

This will be my last comment on our clinical tour through the northern European countries. The roster is filled. In fact, we could have doubled the number. But it is impossible, due to hotel accommodations. There will be forty surgeons and their families in the group. A number of our Fellows who will be in Europe on private tours intend to join at different points along the way.

In my last notes I remarked about the excellence of the Finnish Section, and I am glad to say at this time that we can look forward to a most interesting visit there. The letters I have received are very cordial and the program outlined is most interesting.

Russia at this time is still a question mark. Whether we will be simply tourists, or whether we will have an opportunity to see work in the hospitals of Leningrad and Moscow will not be answered for a few weeks. A request has been made to sec [illegible] official invitation to [illegible] the
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ident of the Austrian Section, of a cordial reception and an opportunity to see the work being done in the University. Dr. Arthur Kline, secretary of the American Medical Society of the University of Vienna, is preparing a most attractive program. Sightseeing in Austria will be a highlight for the families.

Our visit in Munich is being well organized and, again, we will all have an opportunity of seeing the beauty of Bavaria. Our final stop—Paris. For the surgeons, Drs. Thalheimer and Viala are planning much of interest. For entertainment, one has only to remember that—Paris is Paris.

On all this journey through the interesting northern lands of Europe, one outstanding theme will be carried to the surgeons of these countries: the plans that the International College of Surgeons has to take its place as a leader in the broad field of rehabilitation.

◆

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DR. EDWARD L. COMPERE
Tour Coordinator

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Official Tour Representative for the International College of Surgeons

Congress of the French Section

Lyons

June 19-21, 1959

The 1959 Congress of the French Section of the International College of Surgeons is being held June 19-21, 1959, at the Faculty of Medicine, 8, Rockefeller Avenue, in Lyons.

The Congress is open to all members of the French Section, and all members of the College are cordially invited.

The Congress is under the auspices of the national ministries of public health and of education. **Minister Chenot** is personally attending the opening ceremonies.

Honorary Presidents of the Congress

Prof. Henry W. Meyerding, Rochester, Minnesota, U.S.A.
President, International College of Surgeons

Prof. A. Mario Dogliotti, Turin, Italy
President-Elect, International College of Surgeons

Prof. Hermann
Dean, Faculty of Medicine of Lyons

Prof. R. de Vernejoul
President of the National Medical Association of France

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Prof. Max Thorek, Chicago
Founder and Secretary General, International College of Surgeons

Presidents of Constituent Sections of the European Federation International College of Surgeons

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PROF. FAHRI AREL, Turkey
PROF. A. W. FISCHER, Germany
PROF. JUUSO KIVIMAKI, Finland
DR. LEOPOLD LAMBERT, Belgium
PROF. ALFONSO DE LA PENA, Spain
DR. E. KAISER, Switzerland
PROF. NICHOLAS LOUROS, Greece
PROF. LEOPOLD SCHOENBAUER, Austria

PROF. JOHN HENRI OLTRAMARE, Switzerland
Secretary, European Federation, International College of Surgeons

French Honorary Committee

The Inspector General of the Administration, Prefect of Rhône
DR. AUJALEU, Director General of Public Health
The Mayor of Lyons

His Eminence, Cardinal Gerlier, Primate of France
The Rector of the University of Lyons

Inspector-General Raymond Debenedetti,
Surgeon General of the Armed Forces

The President of the Chamber of Commerce of Lyons

Prof. Gabrielle
President of the General Council of Civilian Hospitals of Lyons

Prof. Sedallian
Director of the Pasteur Institute of Lyons

Prof. Raymond Darget
Vice-President, International College of Surgeons

Prof. Agr. Andre Ameline
Vice-President, International College of Surgeons

Prof. Agr. Clavel
President of the Surgical Society of Lyons

Congress Committee

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Prof. Jean Creyssel

Secretary General
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Prof. Agr. Georges de Mourgues
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Dr. Jean Schnepp

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Dr. André Gaté

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Participants in the Scientific Program

Abdominal Surgery

Drs. H. L. Welti, F. Bolot, J. L. Brenier, J. M. Darricau, F. Lagrot, L. Leger and J. H. Marchand, M. Thalheimer and M. Aurousseau

Surgery of the Hand

Drs. Marc Iselin, D. Morel-Fatio and Bitker

Maxillofacial Surgery

Drs. M. Darcissac and d'Esposito, C. Freidel and F. de Mourgues, J. L. Grignon

Osteo-Articular Surgery

Drs. U. Camera, R. Charry, J. J. Herbert, G. Rieunau, G. Vignon

Thoracic Surgery

Drs. A. Mario Dogliotti, M. Laumonnier

General Surgery

Drs. A. Chauvenet, J. Dechaume and J. Guyotat, H. Jourdan, J. F. Cier and M. Jouvet, H. Laborit and P. Niaussat

Gynecology

Drs. H. Filhouland, J. Magendie, E. Pollosson

Ophthalmology

Dr. M. L. Paufique

Oto-Rhino-Laryngology

Drs. P. Mounier-Kuhn and J. Gaillard

Urology

Drs. R. Darget and P. Lamarche

Various Themes

Drs. A. Gate and R. Deleuze, F. Mattei

Thursday, June 18, the day preceding the Congress, is being devoted to the formalities of registering and welcoming the congressists.

On Friday, June 19, the formal opening session takes place in the Grand Amphitheatre at the Faculty of Medicine, after which there is a tour of the services at the Edouard Herriot Hospital. Lunch is at the refectory of the community hospital.

In the afternoon a long working session at the Faculty of Medicine is followed by a reception and party at the City Hall given in honor of the Congress by the mayor and the municipal council of the city.

Saturday, June 20, is devoted entirely to scientific sessions and surgical demonstrations at various hospitals. In the evening the official banquet takes place at the Palais Saint-Pierre.

The closing session is being held on Sunday morning at the Faculty of Medicine, with **Dr. Lucian Diamant-Berger** of Paris as the stated lecturer.

An auto tour of the countryside of Beaujolais follows, with visits to the interesting remains of old churches and to the famous Beaujolais wine caves, where a collation awaits the visitors.

Additional tours, visits to museums and social occasions are planned for the wives and guests of the congressists.

Visitors are arriving from all parts of France and from abroad in great number to participate in this very stimulating Congress of the French Section.

* * *

La Presse Médicale

Le grand journal français de chirurgie et de médecine parait chaque semaine, et donne toutes les informations scientifiques et professionelles

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Under the Auspices of the
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UNITED STATES

The United States Section

International College of Surgeons
announces its

ANNUAL POSTGRADUATE COURSE

August 3, 1959 November 2, 1959

The United States Section of the International College of Surgeons will again offer its Annual Postgraduate Course in cooperation with the Cook County Graduate School of Medicine. It will be a two-week intensive review course in General Surgery presented at the Graduate School and in the wards and operating rooms of Cook County Hospital. Because the course has been oversubscribed in previous years, it will be offered twice in 1959.

The program will include illustrated lectures, motion pictures, anatomy demonstrations, operative clinics and practice surgery by the participants on anesthetized dogs. Consideration will be given not only to surgical technic, surgical complications and management of the surgical patient, but also to an intensive review of the basic sciences in relation to clinical surgery. In addition to twenty hours of surgical anatomy on the cadaver, the program will include lectures and demonstrations on the following:

- Gastric Surgery
- Surgical Physiology
- Use of Blood and Derivatives
- Pediatric Surgery
- Surgery of Large Bowel
- Surgery of Small Bowel
- Intestinal Obstruction
- Anorectal Surgery
- Surgery of Pancreas and Spleen
- Vascular Surgery
- Breast Surgery
- Gallbladder Surgery
- Thoracic Emergencies
- Hand Injuries and Infections
- Gynecologic Surgery
- Surgery of Hernia
- Abdominal Injuries
- Surgery of Esophagus
- Thyroid Surgery
- Radioisotopes in Surgery

For further information write to either of the following:

International College of Surgeons
1516 Lake Shore Drive, Chicago 10, Illinois

Cook County Graduate School of Medicine
707 South Wood Street, Chicago 12, Illinois

Congress of German-Speaking Sections of European Federation

INTERNATIONAL COLLEGE OF SURGEONS

Germany—The Netherlands—Austria—Switzerland

Hamburg, Germany **June 1-3, 1959**

The highly successful Congress of the German-Speaking Sections of the European Federation of the International College of Surgeons, bringing together the Sections of Germany, The Netherlands, Austria and Switzerland in one joint meeting at Hamburg, June 1-3, 1959, has completed its sessions.

The preliminary general program for the Congress appeared in the February and March issues of the *Bulletin,* and it was presented as planned with very few deviations.

The scientific sessions were noteworthy not only for the excellence of the papers but also for the thorough documentation and the interesting surgical demonstrations held in Hamburg's hospitals and clinics.

The film program was outstanding, with presentations that were varied and precise.

The social activities were stimulating and imaginatively planned and organized. The ladies were included in many parties jointly with the congressists, and in addition special events were organized for their entertainment.

Altogether, this Congress of Sections of the European Federation was highly successful.

PLAN TO ATTEND

Twenty-Fourth Annual Congress

NORTH AMERICAN FEDERATION

INTERNATIONAL COLLEGE OF SURGEONS

September 13-17, 1959

Palmer House Chicago, Illinois

From the Executive Director's Notebook

CONGRESS IN CHICAGO AND ROME

Dr. Ross T. McIntire

May has been a very active month in that the program for the Twenty-Fourth Annual Congress of the North American Federation of the International College of Surgeons has been formulated. A brochure, setting forth the outstanding features and some of the speakers, together with an advance registration form, is being mailed to the membership and to other American surgeons. The prospects for a most interesting scientific program are excellent and I urge all of our members to make early reservations.

I should like to call attention to the International Surgical Congress to be held in Rome, Italy, May 15-18, 1960. **Prof. Pietro Valdoni**, professor of surgical pathology at the University of Rome, is the general chairman of the meeting. This in itself assures a professional program of high excellence. **Dr. Alexander Brunschwig**, a vice-president of the International College of Surgeons and an outstanding American surgeon, is given the responsibility for American participation in this meeting. It is my hope that we will support the Rome meeting by having an attendance of at least five hundred American surgeons. This will be a great opportunity for Fellows of the College to present scientific papers before an international group. The meeting is but one year away and now is the time for surgeons to request an opportunity to appear on this program.

On April 29, I was invited to a luncheon given by the Washington Board of Trade and the Medical Society of the District of Columbia, honoring **Senator Lister Hill**, who was the recipient of the annual Health—U.S.A. Award. I was honored to represent the International College of Surgeons at this great gathering of men in the medical, health and business fields. Senator Hill is to appear on our program at the September meeting.

Following this luncheon, I flew back to Chicago, where I had the honor of presenting a citation from the President's Committee on Employment of the Physically Handicapped to **Dr. Edward Holmblad**, retiring secretary of the Industrial Medical Association. Dr. Holmblad has given outstanding service in the industrial field and in rehabilitation.

Word has been received from **Dr. Arnold Jackson**, chairman of the regional meetings committee, that the Mid-Atlantic Regional meeting will be held at the Homestead, Hot Springs, Virginia, November 16-18, 1959. **Dr. E. G. Gill** will again serve as general chairman. He expects to have the regents of all the states in that section actively assisting him. The meeting in 1958, which was held at the Homestead, was a success in every way, and we hope you will all make a note of these dates, for the hospitality of the Homestead is traditional.

Southern California is planning a regional meeting to be held in Las Vegas, Nevada, in the fall of 1959.

In my next article, I will report on the Alabama State Meeting at Huntsville, Alabama, and the New York State Meeting at the Concord Hotel, Kiamesha Lake.

Ross T. McIntire

International Surgeons' Hall of Fame

DISTINGUISHED VISITORS FROM AFAR

Above: Dr. Shafiuddin Kahn, of Pakistan, in front of statue of Hippocrates in the Hall of Immortals

Above at right: Dr. Ricardo Aguilar Meza, F.A.C.S., F.I.C.S., and Dr. Ruben Aguilar Meza, of Guatemala

At right: Dr. Juan Alberto Peralta Lopez, F.I.C.S., and Dr. Federico Emilio Jonas, F.I.C.S., of Rosario, Argentina

United States Section

THE PRESIDENT'S MESSAGE

The Section of Trauma and Rehabilitation

Dr. Edward L. Compere

Rehabilitation is a word which is frequently heard, but the full meaning and the significance of what this word connotes is not understood by most physicians and means almost nothing to the average layman. Every physician should be fully cognizant of the meaning, and the importance, of *Rehabilitation*. All who are engaged in the care of sick or injured patients are carrying out some phase of rehabilitation. Rehabilitation centers have been established in almost every city of this country, but only a few of the many patients who could benefit by a rehabilitation program, after they no longer need care in a hospital, are ever referred to rehabilitation centers.

Rehabilitation Centers

Rehabilitation centers should be under the supervision of a physician who is familiar with all the various phases of rehabilitation of injured and disabled patients. The primary purpose of the rehabilitation center is to develop all of the patient's talents and abilities which remain to him, after he has recovered from the more acute phase of his incapacity and no longer needs the care rendered while he was a patient in a hospital. The end result is to restore the patient's abilities sufficiently for him to be able to carry on as a worker or at least be able to look after his own personal needs. A complete program of rehabilitation requires a team of specialists. In a well organized rehabilitation center there will be a medical director; a manager who is not, as a rule, a physician; physical therapists; occupational therapists; a prosthetist who has been trained in measuring for and fitting artificial limbs, and possibly a job-placement counsellor.

Success in rehabilitation is more readily attained if the injured worker, or patient who has been seriously ill, is referred when hospital or active out-patient treatment terminates and not after many months of idleness following the hospital care. Rehabilitation to restore the maximum ability of the individual to work and to live as nearly normally as possible should be of great importance to the surgeon who is more interested in his patients than in the disease or injury which afflicts them.

New Section for Rehabilitation

The Executive Council of the International College of Surgeons has approved a recommendation that a Section of Rehabilitation be established in the United States Section of the International College of Surgeons. Participation in the activities of this Section would be open to any member of the International College of Surgeons, regardless of in what special phase of surgery, or surgical specialty, he is primarily interested. Doctors of physical medicine, whose educational and clinical background meets the requirements for membership or Fellowship in the College, will be eligible to apply for membership in this Section. Physicians known to be especially interested in and trained in the precepts of rehabilitation have been invited to form a Founders Group. Most have replied with enthusiasm that they would be very much pleased to participate in the formation of a Section of Rehabilitation in the International College of Surgeons. It has been suggested that this Section be combined with the recently formed Section of Trauma, to be known as the Section of Trauma and Rehabilitation. Orthopedic surgeons, general surgeons and surgeons from each of the other Sections will be invited to take part in the work of this Section. An attempt will be made to hold a preliminary meeting of those who have indicated a desire to help in the formation of this Section within the next few weeks.

Presidential Tripping

In my last President's message I mentioned the fact that I have been doing a considerable amount of traveling, some of it directly in behalf of the College and all of it with the College's interest close to my heart. My trip to Houston and to San Antonio, Texas, in the month of May provided me with the opportunity of speaking in Houston to the Houston Orthopaedic Club, which includes in its membership orthopedic surgeons from Galveston, Beaumont and other nearby towns. I greatly enjoyed my visit and was surprised that so large a number of orthopedic surgeons attended the meeting. In San Antonio, I gave three separate papers. One was presented before the General Assembly of the Texas Medical Association; a second to the Texas Orthopaedic Association; and a third to the Texas Society for General Practice. I also participated in a symposium on the subject of *Surgical Infections.* We were fortunate to be in San Antonio during the first few days of the annual Festival of Flowers, which is similar in many respects to the more widely known New Orleans Mardi Gras.

The third week of May, I was in Atlantic City as visiting chief of staff at the Atlantic City Hospital. Before this letter goes to press, Virginia and I expect to attend and participate in the meeting of the New York State Section of the International College of Surgeons. This meeting will be at the Concord Hotel, located on Kiamesha Lake, a delightful resort facility which has excellent arrangements for taking care of a convention crowd. We hope that many of you will be there with us.

Edward L. Compere

INTERNATIONAL COLLEGE OF SURGEONS
GROUP MALPRACTICE INSURANCE PLAN

$200,000/$600,000 Limits of Liability are now available to members covered under the ICS Group Malpractice Insurance Plan.

Please write to John L. Krause, Administrator, 1576 Sherman Avenue, Evanston, Illinois, for rates and further details regarding the Plan.

News Briefs

MID-ATLANTIC SECTIONAL MEETING OF INTERNATIONAL COLLEGE OF SURGEONS

The Mid-Atlantic Sectional Meeting of the United States Section of the International College of Surgeons will be held on November 16, 17 and 18, 1959, at the Homestead Hotel in Hot Springs, Virginia.

Dr. Elbyrne Grady Gill, F.A.C.S., F.I.C.S., regent of Virginia for the International College of Surgeons, is directing the effort of the program committee in organizing a fine series of outstanding scientific sessions. The Homestead Hotel in Hot Springs in Virginia offers facilities, especially during the month of November, for a most pleasant stay.

HIGHLIGHTS OF THE INDIANA REGENT'S STATE MEETING

The Indiana Regent's State Meeting, held in Indianapolis on May 6, 1959, was a most successful event.

It was attended by Fellows of the College, guest surgeons and students of surgery. It attracted favorable comment from all segments of the profession, from the press as a whole, and from radio and the public. The Hon. Harold W. Handley, governor of the state of Indiana, was present and extended his personal and official greetings.

The scientific program was excellent, well balanced and well timed. The participants were:

Claude J. Hunt, M.D., F.A.C.S., F.I.C.S., Kansas City, Missouri
Peter Rosi, M.D., F.A.C.S., F.I.C.S., Chicago
J. K. Berman, M.D., F.A.C.S., Indianapolis
George Garceau, M.D., F.A.C.S., F.I.C.S., Indianapolis
Stanley Battersby, M.D., Indianapolis
Cyril Taylor, M.D., Indianapolis
Roscoe E. Miller, M.D., Indianapolis
Goethe Link, M.D., F.I.C.S., Indianapolis

Dr. John D. Van Nuys, dean of the Indiana University Medical Center, delivered the opening address.

DR. J. GRAFTON LOVE CHOSEN PRESIDENT-ELECT OF CUSHING SOCIETY

J. Grafton Love, B.A., M.D., M.Sc. (Surg.), D.Sc. (Hon.), F.A.C.S., F.I.C.S. (Hon.), head of the Section of Neurologic Surgery in the Mayo Clinic and professor of neurologic surgery in the Mayo Foundation, was chosen president-elect of the Harvey Cushing Society at the annual meeting of the organization in New Orleans recently.

Dr. Love will take office in 1961.

The Harvey Cushing Society now has some seven hundred members, and is the largest neurosurgical group in the world. It was founded in 1931 and was named in honor of Dr. Harvey Cushing, the celebrated American neurologic surgeon. The objectives of the society are to promote the study and advancement of neurologic surgery and allied subjects related to organic neurology.

Dr. Love, a native of North Carolina, came to Rochester in 1929 as a fellow in surgery of the Mayo Foundation, and received the degree of master of science in surgery from the University of Minnesota in 1932. In October of that year Dr. Love was invited to take the place of Sir James R. Learmonth, who was returning to his home in Scotland, as a neurologic surgeon of the Mayo Clinic, and in 1934 Dr. Love became a member of the staff as a consultant in neurologic surgery. He was appointed head of the Section of Neurologic Surgery in April 1955.

Joliet Students of Medical Science in front of Surgeons' Hall of Fame

JOLIET STUDENTS OF MEDICAL SCIENCE VISIT HALL OF FAME AND OFFICE OF FOUNDER OF INTERNATIONAL COLLEGE OF SURGEONS

Students of Medical Science at the Joliet Junior College of Joliet, Illinois, recently made their annual pilgrimage to the International Surgeons' Hall of Fame in Chicago and were also received by Dr. Max Thorek and Dr. Philip Thorek at the American Hospital and permitted to view such surgical procedures and equipment as would be of interest to young students.

Dr. Max Thorek, Founder of the International College of Surgeons, spoke to the visitors and personally directed them through his reception rooms, which house part of his remarkable collection of memorabilia.

Dr. Edmund C. Puddicombe, instructor in anatomy and advisor to premedical students at the Joliet Junior College, is sponsor of the Students of Medical Science organization and accompanied the group on its visit to Chicago.

INTERNATIONAL COLLEGE OF SURGEONS' POSTGRADUATE SCHOLARSHIP PROGRAM AROUSES WIDESPREAD INTEREST

Dr. Horace E. Turner, of Chicago, chairman of the Scholarship Committee of the International College of Surgeons, reports that inquiries concerning the program come from applicants in many parts of the world.

Currently the committee is considering applications from Canada, Greece, Germany and several other countries. In all these countries the active participation of the national sections is of inestimable help in selecting the most promising candidates.

DR. HOLT TO HEAD NORTH CAROLINA EYE BANK

L. Byerly Holt, M.D., F.I.C.S., of Winston-Salem, North Carolina, was elected the Medical Director of the North Carolina Eye Bank. Dr. Holt is a Medical Director of Marguerite Moon Eye Research Foundation, Incorporated.

Journey Into Freedom

EXCERPTS FROM A TWENTIETH CENTURY BIOGRAPHY
PART III

JOSEPH ANTHONY MALEJKA, M.D.
NEW YORK CITY, NEW YORK

SUMMARY OF PREVIOUS INSTALLMENTS: In Poland, during midsummer of the year 1946, at the age of twenty-one, I sought and finally obtained my parents' permission to leave the country. Five years earlier I had been shipped to Germany as a slave farm laborer. I had escaped to serve for three years in the Polish underground. Now I sought a future elsewhere in the world. I said goodbye to my parents and to my young brother. Together with a boyhood friend whom I here call Henry posing as students on a holiday, I made my way to Zgorlice (Gorlitz) on the river Nisa (Neisse). This was now the Polish-German boundary, and after a near-disastrous attempt to enlist the aid of a Polish soldier, I joined a group of would-be escapees led by a professional smuggler.

The atmosphere of waiting now became one of extreme tension for us all. The smuggler advised Henry that he should return to his hotel. The curfew for citizens was approaching and he would run into trouble if found on the streets after midnight. He assured Henry that the following day he would let him know whether I had been successful or not, but that now, for his own sake, Henry must return to his hotel. Henry and I, therefore, said a quiet farewell.

Henry left and I now waited alone. Shortly after midnight, the signal was given. Only now the smuggler turned to me and said, "My price is twenty dollars in American money."

Mentally, I hedged. All I had in life was fifteen dollars and cigarettes. I tried to bargain.

"I have only five dollars," I told him. He shrugged.

"Twenty dollars or nothing," was his curt reply.

I was tempted to up my offer. But I knew that if I should succeed in escaping, the money I had was my only bargaining position to open the door to the future. So I quickly decided to stick to my guns. In turn, I was as quickly turned down by the smuggler. The others departed. I remained.

My only recourse was to return to the hotel, to Henry. Here, after repeatedly throwing pebbles at his window, I finally succeeded in arousing him. When he came to open the front door, his smile was forced and sad.

"So! You want a night's sleep?" he said aloud for the benefit of any who might have been listening. I entered and once more became a part of the student tourist picture as initially presented by us both. Again I had failed.

Zgorzelice (Gorlitz) had now become dangerous territory for us. We were known to the professional smugglers and we feared that we might also be known to the officials. We had to move. That night we determined the best direction was towards Czechoslovakia. Our destination the following day, therefore, was the town of Leszna, located in the southwest corner of Poland.

Dr. Joseph Anthony Malejka

We arrived in Leszna about four o'clock that afternoon. Again we did the usual thing and booked into a hotel. It was the only hotel in the town, which was a tiny place consisting only of the families of workers connected with the town's two factories, one a wool mill and the other manufacturing wood products.

Again we canvassed the situation as regards opportunities for crossing the border. Here the border was not a river, but rather an imaginary line running along the southern Sudeten Mountain range. We wished to determine how well it was guarded. We left our luggage and papers of identification in the hotel and started out as wandering tourists. The roadways were blocked by gates. So we took to the countryside.

We walked on, crossed a shallow stream and, after two hours, found ourselves in a small village. We looked at the signs. They were printed in Czech. We had crossed the border! How simple. We quickly determined to go back to the hotel, pick up my belongings and papers and return.

We were walking back towards Leszna across the same cornfields and meadows, meditating on our good fortune and in high spirits, when, all of a sudden, out of nowhere, a soldier approached us with gun raised. Before even speaking to us, he whistled for assistance. At once, from their hiding places in the cornfield, three other soldiers emerged, with guns pointed, walking about one hundred yards apart. We were now asked what we were doing here. Seeing they were Czech border police, our answer was ready.

I smiled innocently. "We are Polish students on a holiday. We lost our way, realized we had inadvertently crossed the border, and we are on our way back."

It was a strong point, but not sufficient to allay suspicion. If we were students on a holiday, why were we wandering around in such an isolated area? Before we could answer, again we heard the words, "Come with me," and we found ourselves following the soldier, with the other three soldiers behind us, guns still raised.

As we walked, children and the people of the village gathered around and accompanied us. By the time we arrived at the office of the commandant of the border police, the atmosphere was one of curiosity and extreme tension. It was six o'clock in the afternoon.

As we entered, a tall, intelligent-looking man of about fifty turned from his desk to look at us. Our guards explained that they had caught us over the border, that our story was that we were two Polish students who had wandered across the border, and that when they had found us, we were heading back towards Poland. The Commandant asked if we could understand the Czech language. This we could reply in the affirmative. We were also able to produce our student cards to confirm our story. The Commandant now became most friendly.

"How is the life in Poland?" he asked.

"Life is hard," I replied. "Food is expensive compared to wages. The destruction of the villages and towns is great."

"What about the wages of state employees?" he asked. "What can they buy in the way of clothes?"

"One month's earnings would cover one half the price of a cheap suit," I replied.

From the subject of economy, he then turned to that of life under the new conditions in both Czechoslovakia and Poland and he finished our conversation here with the simple statement, "It will be better."

He asked then if, as students, we could live without hardship. Could we buy our books and equipment?

We lied and answered in the affirmative.

He now changed the subject once more—to that of freedom.

"Poland is your neighbor," I stated, "and we are happy about it."

To show that I had keen interest in his country, I said I was glad that Czechoslovakia had recovered the Sudetenland and was making a good program for securing its freedom and peace.

We were then offered drinks of cool and delicious milk and our guards were ordered to accompany us back to the border and let us free. During our return trip, it occurred to me for the first time that, after five years of war, an occasion might arise when being a Pole would prove convenient in a crisis.

Our guards now being friendly, I indicated my interest in seeing the boundaries of the new Czechoslovakia, hoping to find that the American zone was still in Pilsen, only one hundred and fifty miles away from us. Our guards readily produced a map, but I was disappointed to see that the Americans were no longer in Pilsen, but on the old pre-war border.

As we neared the Polish boundary, we were both tense with fear that we would be met by Polish police and have to undergo further questioning, which would not be so easily evaded. It was with relief, therefore, that we found our guards bidding us a quiet farewell about one hundred yards from the barrier. They watched silently then as we slipped under the gate and made our way into the cornfield beyond, all unnoticed by the Polish guards who were chatting in the guardhouse.

We were free once more. However, we were again back in Poland, and we now realized we had accomplished little towards the final goal of escape. We trudged back towards Leszna and our morale was low. We had achieved literally nothing.

(To be continued in the July issue)

Dr. Joseph Anthony Malejka, now a third-year surgical resident at Beekman-Downtown Hospital in New York City, was the recipient of the 1956-1957 international scholarship offered by the Woman's Auxiliary to the United States Section of the International College of Surgeons. He spent that year as a fellow and assistant resident in surgery at the Albert Einstein College of Medicine and the following year as resident in general surgery at Beth Israel Hospital in New York City. In September 1957, Dr. Malejka read one of three resident award essays presented at the Twenty-Second Annual Congress of the North American Federation of the International College of Surgeons. His paper, The Metabolic Response to Surgery, *was accepted for publication by the* Journal of the International College of Surgeons *November 5, 1957, and published in September 1958.*

Woman's Auxiliary

THE PRESIDENT'S MESSAGE

Public Relations

Mrs. Earl Ingram Carr

I have been thinking a great deal recently of the role a surgeon's wife can play in fostering good public relations for the medical profession.

Surely we can contribute much that is constructive toward creating the true image of the profession in the minds of the public. This can very well prove to be a project of utmost importance in the future.

Irresponsible reporting, based on half-knowledge, has an insidious effect in undermining the integrity of the medical profession. It is anything but chauvinistic to state that our country has the finest medical services in the world. And they are constantly improving. This success story, of which we all are so aware, must be told and retold in a simple and forthright manner to help stem the tide of propaganda for the enactment of socialized medicine.

We know the stature our medical profession has achieved in a free economy, but somehow we must find more outlets for public information to tell this story. I am not suggesting that we consider the use of a public relations expert, but the possibilities that present themselves to a public relations committee of our own are challenging. I am sure that the International College of Surgeons welcomes any assistance in this field that our Auxiliary can give.

Just jot down at random over a month's time, when the opportunity presents itself, some healthy public relations ideas in behalf of the medical profession. I think the number of ideas you have will amaze you. It has struck me repeatedly of late that we simply must be more vigorous in our approach to public relations.

Close as we are to the medical profession, I often wonder how conversant we are with its magnificent contributions to the growth and health of our country. There is so much material to be read on the subject that, in fairness to ourselves and our husbands, we should be walking encyclopedias of its imposing record.

I disagree with those who hold that a wife has no part in her husband's professional life. To me, this type of thinking is as outmoded as the Model T. True, in bygone years a woman's life revolved largely within the shadows of the home and, as a consequence, she was unable to play even a secondary role in her husband's business *milieu.* But the obligations and responsibilities we have assumed today force us, happily, out of the shell of anonymity.

Assumption of these responsibilities is predicated, of course, on knowledge, tact and discretion—the heart of any sound public relations program.

Perhaps I have wandered a bit afield from the original intent of this column, but these thoughts have been with me for some time, and I did want to share them with you. I know what I have written is superficial at best, but I do believe it is a start in the right direction. If we agree to pool our thinking on this all-important subject, something constructive is certain to take shape.

As the fascinating history of the medical profession unfolds, let's make sure that it is told in an honest and forthright manner.

Mrs. Walter Cleveland Burket, whose picture appears on this page, was the first president of the Woman's Auxiliary to the International College of Surgeons. At this time she is the efficient chairman of *our* Public Relations Committee, and also of the Program Committee for the September meeting. She is arranging a succession of events for that meeting that will be entertaining, stimulating and different! Do plan to come.

Now back to Gail Burket. At college, she majored in English and received her Master's degree from Northwestern University. She is the author of six books and of a collection of poems, *This is My Country*, which will be published this year. We are tremendously fortunate to have such a distinguished chairman of public relations.

Mrs. Walter Cleveland Burket

Mrs. Burket is a member of many organizations, among them the National League of American Pen Women, of which she now is the third vice-president. She was elected to Phi Beta Kappa in her undergraduate days, and in 1954 was chosen woman of the year by her social sorority, Delta Zeta.

Mrs. Burket is active in numerous other fields, such as the Daughters of the American Revolution and the Colonial Dames of America. In spite of all these honors, I am sure she is proudest of her three fine and interesting daughters, Elaine, Anne and Margaret.

As you meet members of your board on the *President's Page* I know you are proud, as I am, to be represented by such outstanding women—women typical of the best America has to offer.

Ruth Smith Carr

I am interested in furthering the program of the Auxiliary to the International College of Surgeons. Enclosed is my check ($10.00 per member) covering membership(s) for the following:

NAME:

ADDRESS:

Make check payable to The Woman's Auxiliary, United States Section, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

Announcement of Awards

Offered by the

International College of Surgeons

SECTION ON OBSTETRICS AND GYNECOLOGY

Manuscript Awards

The Section on Obstetrics and Gynecology of the International College of Surgeons is pleased to announce its second annual competition for two awards to be given the authors of manuscripts selected by the Prize Committee of the Section. The first award will be $500 and the second $300.

Fellows of the International College of Surgeons are not eligible. Contestants must be (a) interns, residents, or graduate students in the field of obstetrics and gynecology, or (b) engaged in the practice or teaching of obstetrics and gynecology.

The two successful contestants will be asked to appear in person to participate in the regular scientific program of the Section on Obstetrics and Gynecology at the annual Congress of the North American Federation of the International College of Surgeons in 1959. Personal expenses incurred by such participation must be borne by the winners. The awards will be made in cash by the Chairman of the Section during the course of the 1959 Congress.

An original and three copies of each manuscript (carbon, photostatic, mimeographic or other) and illustrations must be submitted on or before June 1, 1959 to

Dr. Harvey A. Gollin
Secretary, Prize Committee
55 East Washington Street
Chicago 2, Illinois

SECTION ON OPHTHALMOLOGY AND OTO-RHINO-LARYNGOLOGY

Research Grant

The Section on Ophthalmology and Oto-Rhino-Laryngology of the International College of Surgeons has established a Research Grant. This Section is especially interested in the following forms of scientific inquiry.

Furstenberg Plan

A young specialist, a resident or a medical student may be given an opportunity to explore scientifically under supervision.

Leopold Plan

An ophthalmologic or oto-rhino-laryngologic summer fellowship may be instituted for a research project.

Scheie Plan

Junior and Senior medical students of superior ability may be encouraged to enter the special fields of ophthalmology and oto-rhino-laryngology.

Participation Plan

A grant may be given in cooperation with other sponsors in order to help make possible major research projects.

Please apply, giving details and ideas, to

Paul C. Craig, M.D., Chairman
Committee on Scientific Work
232 N. Fifth St., Reading Pa.

Section News

COLOMBIA

CONGRESS OF PLASTIC, MAXILLOFACIAL AND HAND SURGERY

The Third Colombian Congress of Plastic, Maxillofacial and Hand Surgery will be held in Cali, Colombia, South America, August 7-15, 1959.

Dr. Bensíon Goldenberg is president, and **Dr. Jaime Guzmán Guzmán** is secretary general of the Congress.

COSTA RICA

DR. DON FERNANDO CHACON TO HEAD COLLEGE OF PHYSICIANS AND SURGEONS

Dr. Don Fernando A. Coto Chacon, F.I.C.S., urologist at the Hospital San Juan de Dios, San Jose, Costa Rica, has just been elected president of the College of Physicians and Surgeons of Costa Rica.

ECUADOR

Plan Inaugural Meeting of Ecuador Section

The energetic young Ecuador Section of the International College of Surgeons is planning its Inaugural Meeting on a large scale.

The meeting will take place in Guayaquil, September 30—October 4, 1959. The Guayaquil Chapter of the Pan American Medical Association will join in the inaugural ceremonies, and the cooperation of all the leading medical and surgical organizations of Ecuador is assured. Among them are the following:

The Faculty of Medicine of Guayaquil
The Faculty of Medicine of Quito
The Faculty of Medicine of Cuenca
The Ecuador Medical Federation
The Medico-Surgical Society of Quito
The Medico-Surgical Society of Guayaquil
The Ecuadorian Society of Pediatrics
The Ecuadorian Society of Radiology
The Ecuadorian Society of Cardiology
The Society of Orthopedics and Traumatology of Ecuador
The National Cancer Society
The Ecuadorian Society of Urology
The Society of Obstetrics and Gynecology

The Section has extended invitations to distinguished representatives of surgery in America, Europe and Asia, and will present an outstanding and constructive scientific program.

FRANCE

High Political Honors to Members of the College

Two distinguished members of the French Section of the International College of Surgeons who also are active in public affairs have been elected to the French Senate.

Prof. Georges Portmann, M.D., F.I.C.S. (Hon.), professor of otorhinolaryngology at the University of Bordeaux, has been elected Senator from the Gironde and appointed Vice-President of the Senate.

Dr. Bernard Lafay, F.I.C.S., Paris, who has long been in the public medical and health service of his beloved city, has been elected Senator from Paris.

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JAPAN

The annual meeting of the executive council of the Japan Section of the International College of Surgeons was held in Tokyo on February 10, 1959. Officers of the Japan Section were elected as follows:

Prof. Hiroshige Shiota, F.I.C.S. (Hon.)
PRESIDENT
Dr. Masao Tsuzurki, F.I.C.S. (Hon.)
VICE-PRESIDENT
Prof. Komei Nakayama, F.I.C.S.
SECRETARY

The following were elected to membership in the executive council:

Dr. Kiyoshi Kawase, F.I.C.S.
Dr. Shinichiro Kikuchi, F.I.C.S.
Dr. Yoshio Ono, F.I.C.S.
Dr. Shigeru Sakakibara, F.I.C.S.
Dr. Seiji Kimoto, F.I.C.S.

MEXICO

Activities of Fellows of the College

Prof. Dr. Raúl Fournier Villada, F.I.C.S. (Hon.), has been re-elected Director of the Faculty of Medicine of the National University of Mexico.

Prof. Dr. Francisco Fonseca, F.I.C.S. (Hon.), a member of the Board of Governors of the International College of Surgeons, has received the Gomez Farfas medal in recognition of twenty-five years of service on the Faculty of Medicine of the National University of Mexico.

Prof. Dr. Xavier Romo Diez, F.I.C.S., has been elected President of the Sixth National Congress of Orthopedics and Traumatology of the Mexican Society of Orthopedics, which will be held in Mexico City, May 2-7, 1960.

The following will also be active in organizing the congress: **Dr. Eduardo Gomez Jaurequi,** F.I.C.S., the scientific section; **Dr. Roberto Morales Reyes,** F.I.C.S., the section on clinical surgery; **Prof. Dr. Agustin Chardi Cordova,** F.I.C.S., the audio-visual section; and **Dr. Max Luft,** F.I.C.S., public relations and publicity. The keynote of the congress will be articular problems in their various aspects; experimental medicine and surgery; pathology, and treatment.

Prof. Dr. Ricardo Labardini Nava, F.I.C.S., has been designated Director of the Hospital Colonia of the National Railroads of Mexico. This is a part of the Central Hospital of Railroads, located in the City of Mexico.

Dr. Manuel A. Manzanilla, Jr., F.I.C.S., and **Dr. Max Luft,** F.I.C.S., have been named Professors of Surgical Pathology at the National University of Mexico. Dr. Manzanilla, Jr., was Auxiliary Secretary of the Tenth International Congress of the International College of Surgeons in Mexico City in 1957, and Dr. Luft was Vice-President of the Orthopedic Section.

SPAIN

Urologic Seminar in Barcelona

The Twentieth Postgraduate Seminar of the Urologic Institute held in April of this year at the Hospital of Santa Cruz and San Pablo in Barcelona, was an outstanding educational event.

The course was directed by **Dr. A. Puigvert,** F.I.C.S., director of the Institute, with the cooperation of **Prof. E. de la Peña** of Madrid, **Prof. F. Romero Aguirre** of Zaragoza and **Prof. J. Macías Godoy** of Granada. All the members of the Institute participated.

Medical News Front

PORTRAIT OF DR. LOUIS H. BAUER PRESENTED TO W. M. A.

The headquarters secretariat of The World Medical Association has received a portrait in oil of Dr. Louis H. Bauer, its Secretary General since 1948.

Bena Frank Mayer, a New York artist, was commissioned by the board of directors of the United States Committee, Inc., of The World Medical Association to do the portrait, which was produced without the knowledge of Dr. Bauer.

The inscription on the plaque reads:

Louis H. Bauer, M.D.
Presented with appreciation in 1959
by the Board of Directors of the
United States Committee
of The World Medical Association

AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS INSTALLS NEW OFFICERS

The American College of Obstetricians and Gynecologists at its seventh annual clinical meeting in Atlantic City, April 6-8, installed **Dr. John I. Brewer** of Chicago, professor of obstetrics and gynecology, Northwestern University Medical School, as its president. Dr. Brewer succeeded **Dr. R. Glenn Craig** of San Francisco.

Dr. C. Paul Hodgkinson, gynecologist-obstetrician-in-chief at the Henry Ford Hospital, Detroit, was chosen president-elect.

Other officers elected are:

Dr. Edward C. Hughes, Syracuse, first vice-president; **Dr. Ralph W. Jack**, Miami, second vice-president; **Dr. Axel N. Arneson**, St. Louis, treasurer; **Dr. Craig W. Muckle**, Philadelphia, secretary: **Dr. Sprague H. Gardiner**, Indianapolis, assistant secretary.

District officers elected are: Dr. Robert A. Cosgrove, Jersey City, and Dr. F. J. Hofmeister, Milwaukee, chairmen; Dr. S. Leon Israel, Philadelphia, and Dr. Harry K. Waddington, Chicago, vice-chairmen.

Dr. Donald F. Richardson, Chicago, executive secretary of the College, was elected an Associate Fellow of the College.

MEDICAL EDUCATORS OF WORLD TO HOLD CONFERENCE

Medical educators from more than sixty-two countries will meet at the Palmer House, Chicago, Illinois, August 30 to September 4, 1959, to exchange information and consider the problems of graduate, postgraduate and continuing education for the doctors of the world.

Medicine—A Lifelong Study will be the theme of the Second World Conference on Medical Education organized and sponsored by The World Medical Association in collaboration with the World Health Organization, the International Association of Universities and the Council for International Organizations of Medical Sciences.

NOTED ITALIAN PSYCHIATRIST RECEIVES MEDICAL TRAVEL AWARD

Dr. Ugo Cerletti, one of the world's leading psychiatric researchers and the man who pioneered electroshock therapy was awarded a medical travel award during the recent annual convention of the American Psychiatric Association.

Dr. Cerletti, professor of neuropathology and psychiatry the University of Rome, was made a Laureate of the Purdue Frederick Medical Achievement Travel Award. He was cited for his long and outstanding record of important research contributions in the science of psychiatry.

In Memoriam

WILLIAM V. CONE
M.D., F.R.C.C., F.R.C.S.(C.), F.I.C.S. (Hon.)
1897-1959

Dr. William V. Cone
F.R.C.C., F.R.C.S.(C.), F.I.C.S. (Hon.)

William V. Cone, M.D., F.R.C.C., F.R.C.S.(C.), F.I.C.S. (Hon.), of Montreal, Canada, died suddenly on May 4, 1959.

Dr. Cone was professor of neurosurgery at McGill University, chief of the neurosurgery service at Montreal Neurological Institute and neurologist and neuro-surgeon-in-chief to the Royal Victoria Hospital. He also served as consultant neurosurgeon to Montreal General, Montreal Children's, Herbert Reddy and Queen Elizabeth Hospitals; Champlain Valley and Physicians Hospitals in Plattsburg, New York, and Lake Placid Hospital in Lake Placid, New York.

Dr. Cone was born in 1897 at Conesville, Iowa, and gained his early university and medical training at Iowa State University. He did postgraduate work both at Iowa and at Columbia University in New York, and in 1928 came to McGill as a lecturer in neurosurgery.

The following year he was promoted to the rank of assistant professor and in 1935 he was named associate professor of neurosurgery. In 1942 he also accepted an appointment as associate professor of neuropathology.

Dr. Cone was among the first of Canada's doctors to go overseas in World War II. He was an organizer of the No. I Neurological Hospital, and served as its chief neurosurgeon with the rank of lieutenant-colonel.

At midnight of the night of his death Dr. Cone was at the Neurological Institute checking on the condition of his patients, and seemed in excellent spirits. At five o'clock he was found in his office, having died peacefully some hours earlier.

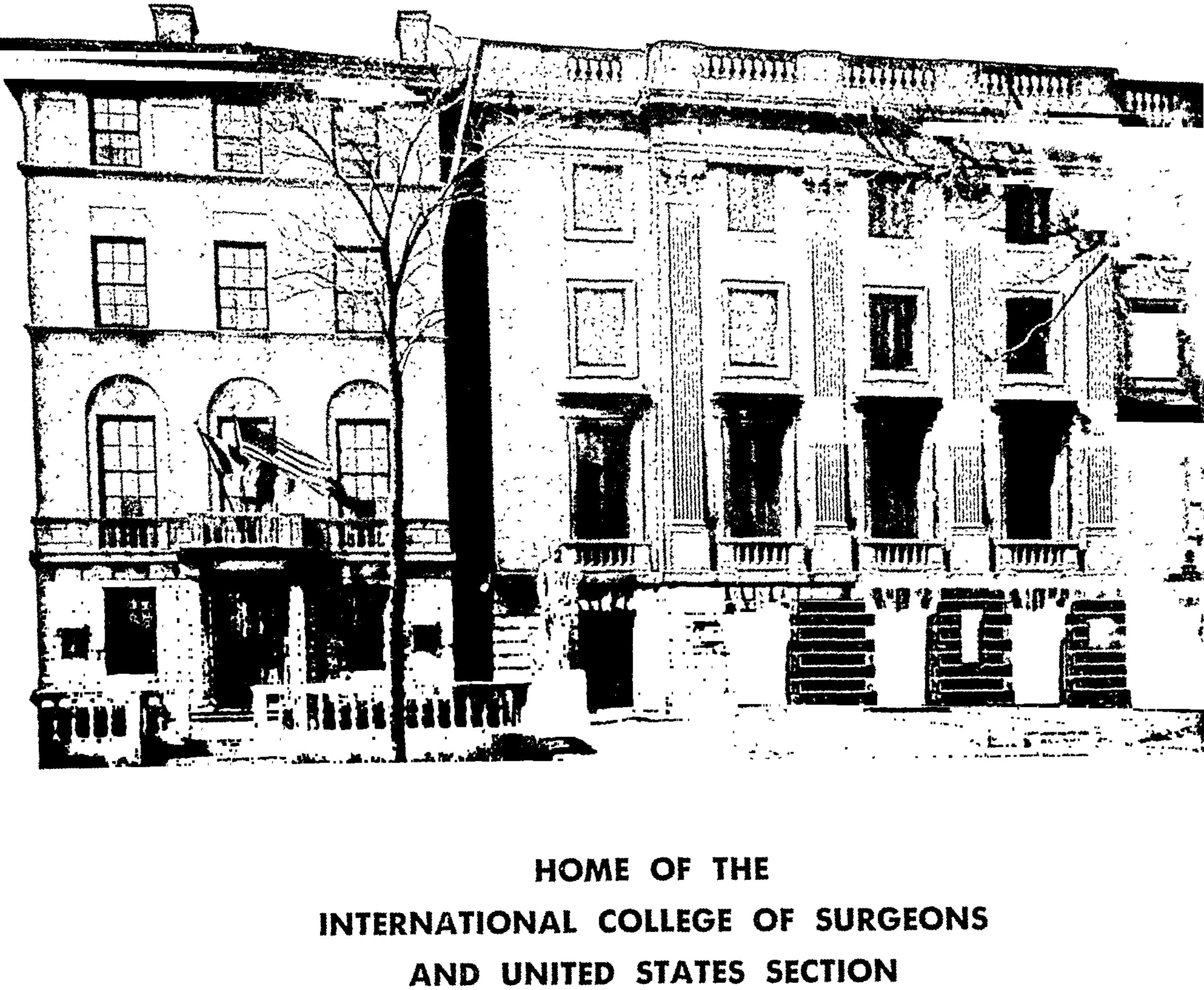
Dr. Cone was a member of the examining board of the American Board of Neurological Surgery; a former chairman of the Committee on Neurosurgery, Royal College of Physicians and Surgeons of Canada; the recipient of an honorary degree from Bishop's University, Lennoxville, Quebec, and a member of many scientific societies. He was the author of numerous contributions to the literature of his specialty.

Honorary Fellowship in the International College of Surgeons was conferred on Dr. Cone at the September 1957 Convocation.

Dr. Cone is survived by his wife, the former Avis Wood; his brother, Dr. Alfred J. Cone of St. Louis, and by three nephews and a niece.

FOUNDED BY DR. MAX THOREK

La Science n'a pas de patrie parce que le savoir est le patrimoine de l'humanité, le flambeau qui éclaire le monde.—*Pasteur*



HOME OF THE
INTERNATIONAL COLLEGE OF SURGEONS
AND UNITED STATES SECTION
INTERNATIONAL SURGEONS' HALL OF FAME,
MUSEUM OF SURGICAL SCIENCE AND SCHOOL OF
THE HISTORY OF SURGERY AND RELATED SCIENCES
1516-26 LAKE SHORE DRIVE
CHICAGO, ILLINOIS

Designed by Dr. Max Thorek
Sculptured by Edouard Chassaing

SYMBOLIC STATUE OF HOPE AND HELP AT ENTRANCE TO INTERNATIONAL SURGEONS' HALL OF FAME

Convocation Address

"The Role of the Surgeon in the Cause of Peace"

DR. RAYMOND B. ALLEN

Chancellor, University of California at Los Angeles

INTERNATIONAL COLLEGE OF SURGEONS

DR. MAX THOREK, Founder

CONVOCATION PROGRAM

WILTERN THEATRE, LOS ANGELES, CALIFORNIA   Thursday, March 13, 1958

Chairman of Congress ...... Joseph de los Reyes, M.D., F.A.C.S., F.I.C.S.

Co-Chairmen of Congress ...... Peter A. Rosi, M.D., F.A.C.S., F.I.C.S.
Lyon H. Appleby, M.D., F.R.C.S., F.A.C.S., F.I.C.S. (Hon.)

Chairman of Convocation ...... Horace E. Turner, M.D., F.A.C.S., F.I.C.S.

Director of Pageantry ...... Ernest F. Purcell, M.D., F.I.C.S.

Music Director and Monitor ...... Claire E. Carr, M.D., F.I.C.S.

Marshal ...... John B. Ritchie, M.D., F.A.C.S., F.I.C.S.

Organ Music ...... George Goulding, Organist

Ire Sonata ...... *Borowski*
Libesfreud ...... *Kreisler*
Largo ...... *Handel*
Finale ...... *Douglas*
Marche Champetre ...... *Boex*
Vorspiel from "Die Meistersinger" ...... *Wagner*

On Stage: International Officers, United States and Canadian Section Officers, Regents, Delegates, Consular Corps, Honorary Fellows, Canadian Candidates and Guests

Processional: Pomp and Circumstance ...... Elgar
Marche Romaine ...... Gounod
Marche Pontificale ...... F. de la Tombelle

Opening of Convocation and Introduction of Curtice Rosser, M.D., F.A.C.S., F.I.C.S., President of United States Section ...... Joseph de los Reyes, M.D.

Invocation ...... Rabbi Maxwell H. Dubin, Wilshire Boulevard Temple

Introduction of Carlos Gama, M.D., F.B.C.S., F.I.C.S. (Hon.), President, International College of Surgeons
Dr. Max Thorek, Founder and Secretary General
Dr. Richard M. H. Power, President, Canadian Section
Dr. E. N. C. McAmmond, Secretary, Canadian Section ...... Curtice Rosser, M.D.

Presentation of Mace to International College of Surgeons ...... Canadian Section

Procession of Flags: "Stout Hearted Men" ...... Romberg

Presentation of Colors: "Canadian National Anthem"
"Star Spangled Banner" ...... Robert Lee Marsh, M.D.

Recession of Flag Bearers: "Semper Paratus" ...... Von Boskerck

Memorial Service for Deceased Members ...... Ernest F. Purcell, M.D.

Salutation ...... Curtice Rosser, M.D.

Convocation Address:
"The Role of the Surgeon in the Cause of Peace,"
Raymond B. Allen, M.D., Ph.D., Chancellor of the University of California at Los Angeles
Introduced by ...... Curtice Rosser, M.D.

Our Progress ...... Ross T. McIntire, M.D., Executive Director

Administration of College Pledge to Inductees ...... Curtice Rosser, M.D.

Conferring of Honorary Fellowship Degrees by International Officers
Carlos Gama, M.D., President, International College of Surgeons
Max Thorek, M.D., Founder and Secretary General of College
Ross T. McIntire, M.D., Executive Director

Introduction of Candidates from Other Sections ...... Carlos Gama, M.D., and Max Thorek, M.D.

Introduction of Canadian Section Candidates ...... Richard M. H. Power, President, and E. N. C. McAmmond, Secretary, Canadian Section

Introduction of United States Section Candidates ...... Curtice Rosser, M.D., President, United States Section, and Ross T. McIntire, Executive Director

Announcements ...... Max Thorek, M.D.
Note: Audience please remain seated until members file out and music ceases.

Benediction ...... Rev. Winston Trevor
Wilshire Methodist Church, Los Angeles

Retire Colors: "American the Beautiful" "Under the Double Eagle"

Recessional: "Triumphal March from Aida" ...... Verdi
"Marche aux Flambeau" ...... Clark

INTERNATIONAL COLLEGE OF SURGEONS HONORARY FELLOWS 1958

RAYMOND B. ALLEN, M.A., M.B., M.D., Ph.D.

Chancellor of the University of California at Los Angeles. Formerly, Dean of Wayne University's College of Medicine; Executive Dean of the Chicago Colleges of the University of Illinois and Dean of the College of Medicine; President of the University of Washington. LL.D. Tulane, Illinois, Lake Forest, Hawaii, Boston, Gonzaga and Southern California Universities, and D.Sc. Whitman College. Member of numerous professional associations including the honorary societies of Sigma Xi, Phi Beta Kappa, Alpha Omega Alpha and Phi Delta Kappa. Author of "Medical Education and the Changing Order" and numerous scientific, educational and general articles.

Presented by

Francis L. Lederer, M.D., F.A.C.S., F.I.C.S. (Hon.), Chicago, Illinois.

D. L. C. BINGHAM, M.B., Ch.B., F.R.C.S. (E), F.R.C.S. (C), F.A.C.S.

Professor of Surgery, Queen's University, Kingston, Ontario; Department of Surgery, Kingston General Hospital. Served with the Royal Army Medical Corps in Great Britain, Iceland and th Middle East. On promotion to Lt. Col. (1942) became Officer i Charge of the Surgical Division of several base hospitals in Egypt Syria and Palestine. Recipient of the Annandale Gold Medal i Surgery, The Royal Victoria Gold Medal in Tuberculosis, Starl Scholarship in Pathology and Medicine and The MacLaggan Priz in Forensic Medicine. Granted the Crichton Surgical Researcl Scholarship in Edinburgh, British Medical Association Scholarship in Surgery, Rockefeller Foundation Fellowship in Surgica Research, held at the University of Michigan; The Syme Fellowship of Edinburgh University and the Francis Mitchell Caird Gol Medal in Surgery. Author of a number of papers on surgica subjects.

Presented by

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Professor of Surgery, University of Kiel, Germany. President, German Section, International College of Surgeons. Formerly, Professor of Surgery, University of Giessen/Lahn; Associate Professor, Frankfurt-Main. Honorary member and member of numerous professional and scientific organizations. Author of textbooks on surgical operations and many other contributions to the surgical literature. Co-author of "Medical Diagnosis."

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ALBERT P. LaCHAPELE, M.D., F.I.C.S.

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Professor and Director of the Orthopedic Clinic of the University Polyclinic, Munich, West Germany. Formerly of the University of Jena and Leipzig. Member of Société Francaise d'Orthopédie et de Traumatologie; Honorary Member of the Società Italiana di Ortopedia e Traumatologia; Presiding Officer of the German Congress of Orthopedic Surgeons in 1947; Publisher of the "Zeitschrift für Orthopädie"; Secretary, German Orthopedic Society. Author of "Orthopädisch-chirurgische Operationslehre," "Unfallorthopädie," and "Kriegsorthopädie," twelve monographs and 130 articles on orthopedic subjects.

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Dean, Faculty of Medicine, University of Ottawa, Ontario, Canada. Formerly, Associate Professor of Physiology, Faculty of Medicine, University of Montreal; Research Fellow of the National Research Council, Physiological Laboratory of the University of Cambridge (1948-51) and General Secretary, L'Association Canadienne Francaise pour l'Avancement des Sciences. Member of scientific societies and author of contributions to the literature in the field of physiology.

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JOHN HENRI OLTRAMARE, M.D., D.Sc., F.I.C.S.

Professor of Surgical Propaedeutics, University of Geneva, Switzerland. Secretary General of the European Federation of the International College of Surgeons. Officer of the Legion of Honor of France. Scientific associate of Dr. Alexis Carrell during the First World War, and Prof. René Leriche and Prof. Léon Bérard. Member of various scientific societies and contributor to the surgical literature.

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Professor, Faculty of Medicine, University of Montreal. Certified specialist in gynecology of the Royal College of Canada. Formerly associated with the gynecological clinic of the Hospital of St. Antoine, Paris, France. Member of various scientific societies and contributor to the surgical literature in the specialty of gynecology.

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Honorary consulting gynecological surgeon, Nethersole Hospital. Hongkong; Founder and honorary consultant, Cancer Hospital and Clinic, Macao; Principal of the Woo Clinic; President of the Hongkong Section, International College of Surgeons. Formerly, Physician Extraordinary to the President of China and Medical Advisor to the Ministry of Foreign Affairs and Ministry of Communications; Honorary visiting professor of gynecology, Dr. Sun Yat-Sen Memorial Medical College, Lingnan University, Canton; First president, China Medical Association and Past president, Hongkong Chinese Medical Association and Chinese Society of Obstetrics and Gynecology. British Decorations: Jubilee Medal, War Service Medal, Long Service Medal, Knight of Grace of the Venerable Order of St. John of Jerusalem, Coronation Medal and Officer of the British Empire. Chinese Decorations: Order of the Chia Ho and Chinese Red Cross Medal.

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CARLO MARINO-ZUCO, M.D., F.I.C.S.

Professor and Chairman of the Department of Orthopedic Surgery, University of Rome, Italy, and Chief of the Postgraduate School of Orthopedics; Advisor and Professor of osteoarticular tuberculosis to the Forlanini Institute of Rome; Italian expert for rehabilitation at the UNO and permanent member of the International Poliomyelitis Congress. Director of "Ortopedia e Traumatologia dell'Apparato Motore" and "Orizzonti della Ortopedia Odierna e della Riabilitazione." National Secretary for Italy of the International Society and President of the Italian Society for the Welfare of Cripples. Honorary Fellow and Member of many scientific societies and author of many publications in orthopedics.

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Arthur Steindler, M.D., F.A.C.S., F.I.C.S. (Hon.), Iowa City, Iowa.

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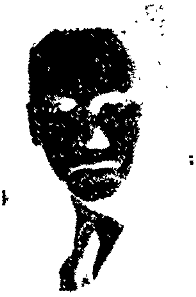

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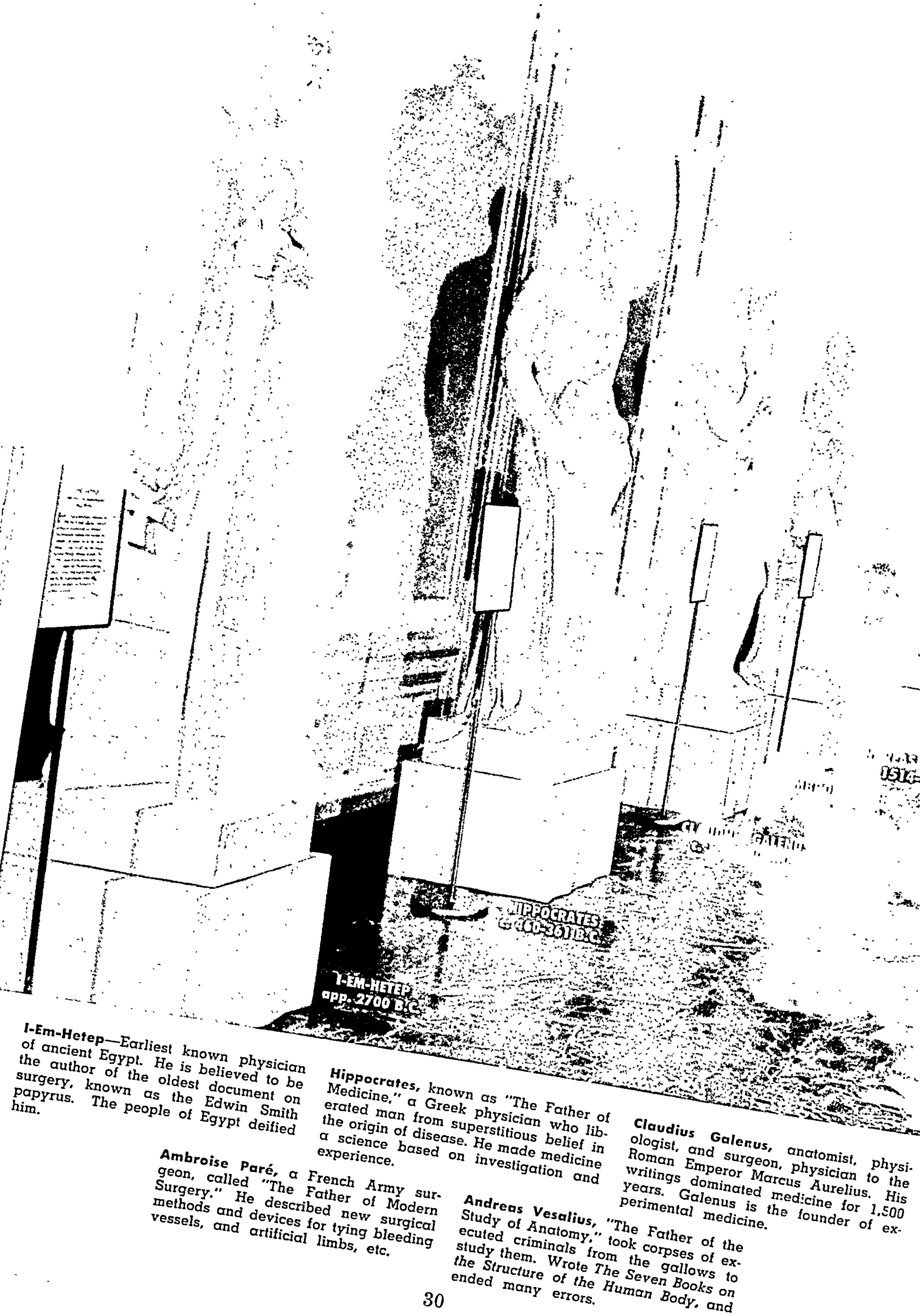

I-Em-Hetep—Earliest known physician of ancient Egypt. He is believed to be the author of the oldest document on surgery, known as the Edwin Smith papyrus. The people of Egypt deified him.

Hippocrates, known as "The Father of Medicine," a Greek physician who liberated man from superstitious belief in the origin of disease. He made medicine a science based on investigation and experience.

Claudius Galenus, anatomist, physiologist, and surgeon, physician to the Roman Emperor Marcus Aurelius. His writings dominated medicine for 1,500 years. Galenus is the founder of experimental medicine.

Ambroise Paré, a French Army surgeon, called "The Father of Modern Surgery." He described new surgical methods and devices for tying bleeding vessels, and artificial limbs, etc.

Andreas Vesalius, "The Father of the Study of Anatomy," took corpses of executed criminals from the gallows to study them. Wrote *The Seven Books on the Structure of the Human Body,* and ended many errors.

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William Harvey, an Englishman, described circulation of the blood in 1616. He waited 12 years before publishing his findings, but even then his discovery met with indifference by the medical world for years.

Giovanni Battista Morgagni, an Italian, was "The Father of Pathological Anatomy." He is noted for studies of the effects of diseases on the body. He pointed out that tuberculosis is a contagious disease.

Ignaz Philipp Semmelweis, a Hungarian physician, pioneered the use of antiseptic methods and reduced the death rate of new mothers at the Vienna Lying-in Hospital from 12 out of 100 to 1 out of 200.

Joseph Lister, one of the greatest surgeons in medical history, proved the necessity of cleanliness and the use of antiseptics in surgery. His findings, published in [illegible], revolutionized operating procedures.

Louis Pasteur proved that germs cause disease and spoilage of food. He developed the pasteurization process to kill germs. **Wilhelm Roentgen** discovered X-rays in 1895. **Marie Curie,** with her husband discovered radium.

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